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## ARTICLE XVI.

*Revision of the Buprestidæ of the United States. By John L. Le Conte, M.D. Read October 21st, 1859.*

THE family of Coleopterous insects treated of in the present memoir has ever been a favourite with Entomologists on account of the large size and splendid colours of many of the species which compose it. Nevertheless the imperfect manner in which it has been studied, and the very superficial observations regarding the generic differences and relations, entirely precluded the possibility of any American entomologist producing a systematic work on this family. Happily, the appearance of the fourth volume of the great work of Lacordaire on the genera of Coleoptera, in which this family is treated of, has entirely removed this difficulty, and I now find myself able to present descriptions of the numerous new species which have been accumulating in my collection.

The author of the work just mentioned, having been able to study species of all the genera so crudely described by previous authors, has been enabled to eliminate the errors of observation and the imperfections resulting from the vague ideas of those who had previously attempted a classification of this family.

In studying the species found within our territories, I have found but little to change from the arrangement proposed by Lacordaire, who has, apparently, grouped the genera in a natural manner, and with the usual happy results that attend his labours. The main difference, I have introduced, is one, perhaps, inevitable from the fact that the material subjected to examination has been different; his observations extend over the species of the entire globe, while mine are confined to those of a portion of one continent. Without at all contending for the superior merit of any change introduced by me, I will only say, that the division of the entire family into groups of equal value has appeared to me the most satisfactory in arranging the material in my possession.

I should gladly have attributed to the antennal pores observed in the species of this family, the primary importance given them in the work of my learned friend, but that I

have observed in every great group, some exceptions to the form presented by the majority of the species of the same group: this appears to me an objection to combining the groups, perfectly natural in themselves, into larger series which are defined by the position of these antennal pores; and this is the only point in which I have diverged from the arrangement of Lacordaire.

The characters of the family have been already exposed by me in my revision of the Elateridæ of the United States, but may be briefly recapitulated as follows:

Coxæ anticæ parvæ, globosæ, non contiguæ, in acetabulis e prosterno et mesosterno compositis receptæ: prosternum pone coxas productum in mesosterno vel etiam in metasterno receptum; abdomen sutura ventrali anteriore plus minus oblitterata, segmentis 1 et 2 connatis: tarsi 5 articulati, articulis 1-4 vel 3-4 subtus lobis membraneis instructis: antennæ serratæ, articulis externis præcipue poriferis: oculi integri, elliptici.

The character deduced from the consolidation of the two anterior segments of the abdomen has been called in question by Kiesenwetter, *Ins. Deutschl.* iii. 6, and 50, (but his observations seem to be defective, (vide infra *Ancylochira*;) and although the suture between these two segments is frequently visible, it never permits of any movement like the other ventral sutures.

In some genera the species approximate so clearly as to present the phenomena of races: instances will be seen in *Chrysobothris*, *Agrilus*, and perhaps in *Dicerca* and *Chalcophora*.

The groups of genera, as defined in the following paper may be thus tabulated:

\* Front not contracted by the insertion of the antennæ.

A. Prosternum obtusely or scarcely angulated on the sides, tip obtuse, (except in *Cinyra*,) mesosternum divided.

I. Mesosternum closely anchylosed with metasternum; antennal pores lateral. *Gyascutus*, *Chalcophora*, *Psiloptera*.

II. Mesosternal suture distinct; antennal pores marginal. *Dicerca*, *Pœcilonota*, *Ancylochira*, *Cinyra*.

III. B. Prosternum acutely angulated on the sides, acute at tip; mesosternum divided. *Melanophila*, *Anthaxia*.

IV. C. Prosternum short, broad, obtuse, not angulated on the sides; mesosternum rarely divided. *Thrincopyge*, *Chrysophana*, *Polycesta*, *Ptosima*, *Acmaodera*.

\* \* Front contracted at the insertion of the antennæ.

V. Prosternum acutely angulated at the sides, acute at apex; mesosternum narrowly divided; mentum corneous at base, membranous at tip. *Chrysobothris*, *Actenodes*.

VI. Prosternum cuneate, not angulated on the sides; mentum large corneous, front perpendicular, mouth inferior, applied to the prosternum. *Coræbus*, *Agrilus*.

VII. Prosternum not angulated at the sides, apex cuneate, fissured, or truncate: mesosternum very widely divided; front inflexed, mouth inferior, applied to prosternum; mentum large corneous; legs contractile, tarsi very short. *Brachys*.

VIII. Prosternum broad, truncate, front perpendicular, mouth inferior free, mentum large corneous; legs not contractile. *Haplostethus*.

## GROUP I.

This group is distinguished by the prosternum being obtusely angulated on the sides behind the coxæ, and then obtusely acuminate: the mentum is entirely corneous: the front is not lobed, the antennal cavities are variable in size: the antennæ have the pores diffused on the lower portion of the sides, but varying greatly in the space they occupy. The mesosternum is closely connate with the metasternum, and is broadly divided. The scutellum is small and rounded, sometimes not conspicuous: the tarsi are lobed beneath, and the first joint is elongated in two of our genera, and short in the third.

Antennæ sub carina majuscula insertæ; mentum late rotundatum	-	-	G y a s c u t u s.
Antennæ in foveis parvis insertæ; mentum late emarginatum	-	-	C h a l c o p h o r a.
Antennæ in foveis majusculis insertæ; mentum late rotundatum	-	-	P s i l o p t e r a.

GYASCUTUS *Lec.*

Antennæ distantes sub carina obliqua elevata insertæ, articulo 1mo conico paulo crassiore, 2 et 3 cylindricis, 4to triangulari 3io haud brevior, margine inferiore poroso, 5—10 sensim paulo brevioribus, infra medium porosis; 11mo apice lobato. Fossulæ antennales magnæ profundæ. Labrum emarginatum. Mandibulæ valde obtusæ; palpi maxillares haud dilatati. Mentum breve corneum antice late rotundatum. Prosternum lateribus postice angulatum, medio obtusum; mesosternum metasterno integro connatum, sutura obliqua, late divisum. Pedes graciles, tarsi subtus lobati, postici plerisque compressi articulo 1mo elongato.

This genus seems most related to *Pelecopselaphus*, which it resembles in form as well as in the narrow compressed posterior tarsi of some of the species: but it differs from that as from every other genus I have seen, by the elevated ridges above the antennæ.

The tip of the abdomen in both sexes has a transverse elevated line near the margin, which in the female is less distinct than in the male: in the latter the line is acute, and forms an acute tooth each side, thus causing the posterior outline to be distinctly sinuous, while in the female it is broadly subtruncate: the inferior anal plate is in the male prolonged in the middle, forming an acute process, which, however, is usually concealed from view. The sides of the elytra are feebly serrate behind the middle. Our species form two groups; the antennal pores in the second are more numerous, covering nearly the whole of the sides of the articulations, and the basal joint of the posterior tarsi is less elongated, and less compressed.

a. *Epistoma late emarginatum*: tarsi postici articulo 1mo sequentibus duobus æquali.

1. *G. planicosta*. *Chalcophora planicosta* Lec. Proceedings Acad. Nat. Sc., 1858, 66. Tab. XII. fig. 1.
2. *G. oblitteratus*. *Chalcophora oblitterata* Lec. ibid.

These two species were collected by Dr. Thos. H. Webb, on a journey from El Paso to

San Diego. The second was found abundantly by Capt. Pope in exploring the Llano Estacado.

b. *Tarsi postici articulo 1mo sequente parum longiore.*

\* *Epistoma late emarginatum.*

3. *G. caelatus.* *Chalcophora cælata* Lec. Proc. Acad., 1858, 67. Ures, Sonora, Dr. Webb.

\* \* *Epistoma profunde emarginatum.*

4. *G. sphenicus.* *Buprestis sphenica* Lec. Proc. Acad., 7, 83. Texas, Mr. Schott.

#### CHALCOPHORA Sol. (emend. Lac.)

Our species fall into two groups, according as the margin of the elytra is entire, or strongly serrate: in the first, the antennal pores are not numerous; in the second, they occupy the sides of the 5th and following joints below the middle, as in the preceding genus. The males have the 5th abdominal segment deeply marginate, with a distinct, entire anal segment.

a. *Elytra margine integro vel subtiliter serrato: thorax inæqualis costa dorsali distincta.*

\* Elytris plagis dilatatis nitidis, sulco subsuturali interrupto.

Thorax lateribus antice valde angulatis (ænea)	-	-	-	-	angulicollis.
Thorax lateribus subangulatis (nigro-ænea)	-	-	-	-	lacustris.
Thorax lateribus antice late rotundatis (nigro-ænea)	-	-	-	-	virginiensis.

\* \* Elytris plagis minus dilatatis, sulco subsuturali integro.

Thorax lateribus antice late rotundatis.

Sulcis mediis parum profundis (aureo-ænea)	-	-	-	-	georgiana.
Sulcis mediis profundis (cupreo-ænea)	-	-	-	-	liberta.
Thorax lateribus ante medium angulatis (ænea)	-	-	-	-	fortis.

1. *C. angulicollis.* *Buprestis angulicollis* Lec. Pac. R. R. Report on the 47th Par. Insects, 44.

*Chalcophora Oregonensis* Fitch, Trans. N. Y., State Agric. Soc., 1857, 702.

My specimen was found at Sacramento, by Mr. Wittick; Dr. Fitch's came from the Dalles of Columbia river. My description having been published in June 1857, has precedence over Dr. Fitch's, which dates from the beginning of 1858.

2. *C. lacustris*, supra nigro-ænea, thorace inæquali, spatiis elevatis nitidis parce, depressis opacis dense punctatis, latitudine brevior, lateribus postice parallelis, ante medium subito oblique convergentibus, inde obtuse angulatis, linea dorsali angusta, sulcis latis minus profundis, elytris spatiis depressis dense punctatis et rugosis, sulco subsuturali antice late interrupta, costa 2nda bis dilatata et subinterrupta, 3ia postice dilatata, 1ma pone impressionem posticam transversim impressa, sutura acuminata; subtus cupreo-ænea. Long. .90—1.0.

Lake Superior, one pair. This species is alluded to by me in the Pacific R. R. Report, above quoted, as a variety of *C. virginiensis*, but on comparison I find, independ-

ently of the form of the thorax, which is shorter, and angulated on the sides, that the sculpture of the depressed portions of the elytra is more rough, and more strongly punctured.

3. *C. virginiensis*. *Buprestis virginensis* Drury, Ins. 1, 66, tab. 30, f. 3. Herbst, Käfer, 9, 114, tab. 148, f. 1: Turton's Linné, 411. ?Gory and Laporte, 2, 11, tab. 2, f. 7.

*B. virginica* Say, Trans. Am. Phil. Soc., 6, 157.

*B. (Chalcophora) virginica* Harris, Ins. Inj. to Vegetation, 44; 2nd Ed. 42; New Engl. Farmer, 1829, p. 2.

*Buprestis mariana* Linn. Mus. Ulr., 89.

*Chalcophora liberta* (var. *obscura*) Fitch, Trans. N. Y., State Agric. Soc., 1859, 701.

*Chalcophora novæboracensis* Fitch, ibid.

Middle, Eastern and Southern States; abundant. This species may be readily distinguished by the dull colour, the fine punctuation of the depressed spaces of the elytra, of which the four impressed spaces are better defined than in the other, and finally by the sides of the thorax being broadly rounded before the middle, and not at all angulated. The synonyms of Dr. Fitch are known to me through specimens kindly communicated to me for comparison by Mr. T. B. Ashton.

4. *C. georgiana*, aureo-ænea, thorace inæquali, spatiis elevatis nitidis lævibus, depressis rude punctatis, linea dorsali latiuscula, sulcis dorsalibus parum profundis postice fere obsoletis, latitudine vix brevior, lateribus antice late rotundatis; elytris sulco subsuturali integro, costa 3ia bis subinterrupta, et paulo dilatata, postice cum 1ma juncta, 3ia postice paulo dilatata cum 4ta haud confluenta, spatiis depressis dense rugose punctatis, sutura acuminata. Long. .93—1.03.

*Buprestis georgiana* Lec. Proc. Acad. Nat. Sc., 1857, 7.

*Buprestis liberta* ‡ Lap. and Gory, Mon. Bupr. 2, 11, tab. 2, f. 6.

Georgia and South Carolina. Larger and comparatively narrower than *C. liberta*, of a more golden colour, less rough, and readily known by the shallow grooves adjacent to the dorsal costa of the thorax.

5. *C. liberta* Fitch, Trans. N. Y. State Agric. Soc., 1857, 700.

*Buprestis liberta* Germ. Ins. Nov. 38.

*Buprestis borealis* Lap. and Gory, 2, 13; tab. 3, fig. 9.

Middle and Western States, abundant, varies slightly in colour, but usually of a fine golden copper tint. The broadly rounded sides of the thorax, the deep dorsal grooves, and the entire sutural stria well distinguish this species.

6. *C. fortis*, ænea, thorace inæquali spatiis elevatis nitidis lævibus obscurioribus, depressis rude confertim punctatis, sulcis dorsalibus modice profundis, latitudine vix brevior, lateribus ante medium obtuse angulatis; elytris sulco subsuturali integro, costa 2nda bisinterrupta, parte secunda paulo latiore, 3ia postice parum dilatata, spatiis depressis dense rugose punctatis, sutura haud acuminata. Long. 1.04.

Pennsylvania and New York, not common; sufficiently distinguished by the greater roughness of the depressed portions, and the angulated sides of the thorax.

The figure of *C. virginiensis* given by Laporte and Gory, and cited above, represents very well this species, which is also considered by Dr. Fitch as being Drury's: Herbst's description makes mention of the fine sculpture of the elytral impressions, and of the acuminate suture, characters not found in the one now under consideration, and which together with the obscure colour, fix the above mentioned No. 3, as the one described by him.

b. *Elytra margine pone medium fortiter serrato: thorax canaliculatus.*

6. *C. campestris*. *Buprestis campestris* Say, Journ. Acad., 3, 165, Am. Ent. tab. 26.  
*Buprestis substriyosa* Lap. and Gory, 2, 13, tab. 3, fig. 10.

Middle States and Western States rare: found according to Say on the Arkansas river. This species agrees very well with Say's description, but very badly with the figure, which represents a smaller insect, with more distinct elytral costæ and no impressions, though the latter are mentioned in the text.

7. *C. Langeri* Chevrolat, Révue and Mag. Zool., 1854, tab. 6, fig. 1.

Louisiana, near New Orleans. Though evidently very nearly related to the preceding, I am induced to place this as distinct, on the authority of Mr. Chevrolat, who, having compared them, has kindly sent me the following notes:

"The species which I refer to *C. campestris* (*prionoptera* Dej.) is smaller, narrower, parallel, obscure above, dull metallic beneath, slightly pubescent, and with the punctures shallow and confluent: the elytra have four straight nervures, and three median depressions: the groove of the thorax is deeper, strongly channeled, and on each side margined. In *C. Langeri* this channel is visible for only three-fourths the length, and presents a slight flattened elevation near the anterior margin: moreover, the thorax is nearly triangular, and the elytra are more dilated."

A specimen from Texas in the collection of Mr. H. Ulke, which I refer to this species is 1.3 unc. long; the thorax is angulated on the sides just before the middle, then narrowed to the apex; the dorsal channel is shallow, and has a smooth medial line. In other respects it agrees with *C. campestris*.

PSILOPTERA Sol. (emend. Lac.)

Our species have the appearance somewhat of gigantic *Dicercæ*, and are nearly related to the Mexican *Buprestis Drummondi*, Lap. & Gory; it is not indeed impossible that one of them may be identical with that species.

The genus will be readily known by the very obtuse mandibles, the antennal pores visible only on the inferior margin, and the equal joints of the tarsi. On the lateral surfaces of the 7th and following joints of the antennæ is seen a deep elliptical fovea, on the

5th and 6th it is represented by a large puncture; I have seen nothing resembling this in any other species of the family. No external sexual characters.

1. *P. Webbii* Lec. Proc. Acad., 1858, 66. Ures, Sonora, Dr. T. H. Webb. The sides of the thorax in this species are moderately rounded and obtusely angulated, and the base is the widest part.

2. *P. Woodhousei*. *Dicerca Woodhousei* Lec. Proc. Acad., 6, 68.

Var. major, *P. valens* Lec. Proc. Acad., 1858, 66.

Creek boundary, Dr. S. W. Woodhouse: Texas, Mr. A. Schott. The specimens from Texas are of a larger size, and more robust form, and the ground color is darker, whereby the spots appear more brilliant, but I do not find any distinctly defined character upon which to separate them. It is readily known from *P. Webbii* by the thorax being widest at the middle, and very much rounded on the sides.

## GROUP II.

In this group the sides of the posterior part of the prosternum are straight, or very feebly angulated, the apex is broad and obtusely rounded in most genera, but sometimes acute. The mesosternum is closely united to the metasternum by a transverse suture, and is broadly and deeply excavated through its whole length, for the reception of the prosternum, as in the preceding group. The antennal cavities are small, and the front is not lobed: the antennal pores are on the inferior edge, arranged in small foveæ, which in our genera are usually marginal, but in *Cinyra* terminal. The scutellum is small and rounded, rarely transverse: the elytra are not serrate in any of our species.

Our genera may be thus arranged.

Prosternum postice obtuse rotundatum;			
mentum totum corneum;			
scutellum parvum rotundatum	-		<i>Dicerca.</i>
scutellum transversum	-	-	<i>Poecilnota.</i>
mentum antice membranaceum	-	-	<i>Ancylochira.</i>
Prosternum postice acutum	-	-	<i>Cinyra.</i>

## DICERCA Esch.

The species of this genus are more numerous in the United States than has been suspected, and, in many instances, are very closely related in appearance, though it is believed that the notes given below, will enable them in every instance to be readily recognised. In this genus, as in *Ancylochira*, are found several species in which the ordinary sexual characters of the male are not observed. I have sought some mark by which these might form a separate group in the genus, but have not met with success: although they



may be isolated by characters to form a group of lower value than the three into which I divide the genus, and which may be thus distinguished.

A. Corpus elongatum, elytris oblique attenuatis et præcipue valde prolongatis, apice sæpissime integris; prosterno metasterno et abdominis segmento primo late sulcatis; mesosterno haud punctato; antennis articulis 2 et 3 æqualibus. Mares segmento ventrali ultimo truncato emarginato, tibiis intermediis intus late emarginatis, et supra medium dente magno armatis. Feminae segmento ventrali rotundato, acute biinciso.

a. Elytra apice integra; abdomen art. ult. ventrali canaliculato lineis duabus lævibus munito. Sp. 1-3.

b. Elytra apice bidentata; abdomen art. ult. vix canaliculato - - - Sp. 4.

B. Corpus elongatum, elytris oblique attenuatis paulo vel vix prolongatis, apice bidentatis (excepta spec. 4.) abdominis segmento 1mo plus minusve sulcato; mesosterno haud vel vix punctato; antennis articulo 2do brevior. Mares segmento ventrali ultimo truncato emarginato, tibiis intermediis sæpissime intus late emarginatis et supra medium dente armatis. Feminae sicut in A.

\* Frons haud transversim carinata.

c. Metasternum sulcatum.

α. Prosternum convexum. - - - - - Sp. 5.

β. Prosternum sulcatum. - - - - - Sp. 6-9.

d. Metasternum haud sulcatum. - - - - - Sp. 10-11.

\* \* e. Frons inter antennis transversim carinata. - - - - - Sp. 12.

C. Corpus crassiusculum, elytris oblique magis abrupte attenuatis et breviter prolongatis, integris vel vix bidentatis; antennis articulo 2do brevior. Sexus differentia varia.

\* Abdomen segmento ventrali ultimo haud costato.

f. Sternum late sulcatum, mesosternum rude punctatum, (abdominis segmento ultimo maris truncato emarginato.) - - - - - Sp. 13-15.

g. Sternum parum sulcatum, mesosternum parce punctatum (abdominis segmento ultimo maris?) Sp. 16-17.

h. Prosternum planum cum mesosterno dense punctatum, (abdominis segmento ultimo feminae rotundato, maris truncato.) - - - - - Sp. 18-20.

i. Sternum valde sulcatum, mesosternum parce punctatum, (abdominis segmento ultimo maris rotundato.) Sp. 21-22.

\* \* k. Abdomen segmento ultimo acute bicostato, (maris truncato, haud emarginato.) Sp. 23.

#### A.—a.

1. D. p r o l o n g a t a, griseo-ænea, sæpe pruinosa, thorace latitudine plus duplo brevior, lateribus antice valde rotundatis postice subsinuatis, punctato, canaliculato, utrinque pone medium oblique profunde impresso; elytris striis profundis, interstitiis spatiis oblongis obscurioribus lævibus parum elevatis, postice oblique attenuatis, prolongatis, apice rotundatis vix divaricatis; subtus parce pubescens. Long. .77—.85.

Lake Superior, Nebraska, and Wisconsin. From the other species of this group, it differs by the thorax being shorter, much narrower and more rounded in front, more punctured, and with the dorsal channel and oblique impressions, more strongly marked. As in the neighbouring species, the pro- and metasternum, and first ventral segment are broadly and deeply sulcate, and the divided mesosternum very sparsely punctured: the last ventral segment has two smooth longitudinal spaces. The last ventral segment of the male is

tolerably deeply emarginate, and the middle tibiæ are armed with a large subacute internal tooth, the inferior margin of which, as well as the tibia, is distinctly serrate; the sternum is also more hairy than in the female. The last ventral segment of the female has the lateral teeth rounded, the middle one acute.

2. *D. divaricata*, ænea, vel aureo-ænea, sæpe pruinosa, thorace latitudine duplo brevior, lateribus antice rotundatis, postice subsinuatis, lateribus confluentibus, medio discrete punctato, subcanaliculato, vittaque obsoleta sublævi utrinque notato, utrinque pone medium oblique impresso; elytris punctatis, striis internis distinctis, interstitiis alternis spatiis oblongis lævibus parum elevatis variegatis, postice oblique attenuatis, prolongatis, plus minusve divaricatis, subtruncatis, sutura prominula, subtus parum pubescens. Long. .63—.90.

Lec. Agassiz' Lake Superior, 227: Fitch, Trans. Agr. Soc. New York, 1856, 366.

*Buprestis divaricata* Say, Journ. Acad. 3, 163: Trans. Am. Phil. Soc. 6, 158. *B. (Stenuris) div.* Kirby, Fauna Bor. Am. 154. *B. (Dicerca) div.* Harris, Ins. Inj. to Veg. 42.

*Buprestis acuminata* ‡ Lap. & Gory, Mon. Buprest. 2, 106, tab. 27, f. 145.

*Dicerca dubia* Mels. Proc. Acad. 2, 142.

*Dicerca aurichalca* Mels. Proc. Acad. 2, 142.

*Dicerca parumpunctata* Mels. Proc. Acad. 2, 143.

Middle States, abundant: the larva burrows in the wood of the cherry and the beech. The thorax from the arrangement of the sculpture has the appearance of having 4 faint costæ. The sexual characters are as in *D. prolongata*, except that the inferior margin of the tooth of the middle tibiæ of the male is not as strongly serrate. The prolongations of the elytra vary somewhat in length and degree of divergence, and I have one specimen in which they are very short and closely applied to each other, but the edge of the elytra near the apex shows a fold, which must have resulted from an injury received in an earlier state of development. The specimens described by Dr. Melsheimer must all be referred to these individual variations. Say's description would leave it in doubt whether this or the next species were meant by him, but specimens were furnished by Dr. Harris to Mr. Kirby, and have been described by the latter sufficiently to attach the name to the species now under consideration. For this reason I have been obliged to reject the names of Dr. Melsheimer for this, and to propose a new name for the next species.

3. *D. caudata*, ænea, sæpe pruinosa, punctata, thorace latitudine sesqui brevior, a basi antrorsum angustato, lateribus late rotundatis, lateribus dense, medio discrete punctato, subcanaliculato, lineaque obsoletissima sublævi utrinque notato, et obsolete oblique impresso; elytris striis vix distinctis, interstitiis alternis spatiis oblongis lævibus variegatis, ad apicem valde prolongatis divaricatis, subtruncatis, sutura haud prominula. Long. .6—.7.

Middle and Western states. I have received this species from Dr. Melsheimer as *D. divaricata*, but for reasons above given I cannot adopt his view. It only differs from the last by the form of the thorax, which is narrowed from the base to the apex by the less distinct elytral striae. The sexual characters are precisely as in the last.

## A.—b.

4. *D. p u g i o n a t a*, æneo-cuprea, thorace latitudine paulo brevior, antrorsum a basi paulo angustato, lateribus parum rotundatis, rude punctato, profunde canaliculato, costisque 4 sublævibus notato, externis interruptis, sæpe obsoletis, elytris striis punctatis, versus suturam distinctis, interstitiis spatiis lævibus nigricantibus parum elevatis variegatis, ad apicem valde prolongatis bidentatis. Long. .45—.54.

*Buprestis pugionata* Germ. Ins. Nov., 57; (nec Laporte & Gory.)

Pennsylvania, Maryland: Dr. Melsheimer, and Mr. J. P. Wild. A pretty little species, very distinct from all others by the characters above given. The sternum and first ventral segment are sulcate as in the others of group (A,) the last ventral segment in one specimen is marked with two elevated lines more approximate than *D. divaricata*, but in two other specimens before me, I can scarcely perceive them. The tip in the female is tridentate, the middle tooth narrow, but rounded at the apex. The male is unknown to me.

B.—c,  $\alpha$ .

5. *D. m u t i c a*, longiuscula, griseo-ænea, thorace latitudine sesqui brevior, ante medium fortius angustato, et lateribus sinuato, fortiter, ad latera confluentem punctato, dorso canaliculato, elytris punctatis, striis internis distinctis, interstitiis spatiis obscuris variegatis, internis nitidis parce punctatis, postice oblique attenuatis, haud prolongatis, rotundatim truncatis, prosterno convexo, parce punctato, metasterno segmentoque ventrali primo sulcatis. Long. .64.

Mas segmento ultimo ventrali rectangulariter inciso, dente emarginationis brevi lato recte truncato, tibiis intermediis rectis. Sexus altera latet.

One specimen from Brooklyn, New York, given me by Mr. J. Akhurst. Differs remarkably from all other species known to me; the sculpture of the elytra is exactly as in *D. lurida*.

B.—c,  $\beta$ .

6. *D. o b s c u r a*, griseo-ænea cuprascens, thorace latitudine sesqui brevior, a basi antrorsum angustato, lateribus late rotundatis, rude confluentem punctato, utrinque pone medium late impresso, costula obsoleta sublævi notato, medio parce punctato, sulco dorsali subinterrupto, elytris punctatis, striis versus suturam et apicem punctatis, interstitiis internis lævibus nigro variegatis, ad apicem sensim attenuatis bidentatis, parum prolongatis. Long. .60—.75.

Mas tibiis intermediis simplicibus, abdominis segmento ventrali ultimo tridentato, dente intermedio brevissimo lato truncato.

Femina segmento ventrali ultimo tridentato, dente intermedio angusto acuto.

*Buprestis obscura* Fabr. Ent. Syst. 1, 2. 190: Syst. El. 2, 190. Herbst, Käfer, 9, 96; tab. 143, f. 5. Gory & Lap. Mon. Bupr. 2, 103; tab. 26, 141.

? *Buprestis pruinosa* Gory, Mon. Bupr. 4, 190; tab. 19, 106.

Massachusetts to Florida. Readily distinguished from all others but the two next, by the freedom from any conspicuous elevations, and by the thorax being narrowed from the

base: from the next, it differs by the sides being broadly rounded. Body beneath coppery, coarsely punctured, on the sides and abdomen, shining and sparsely punctured on the middle of the breast, and first ventral segment. The elytra towards the suture are polished, with the intervals smooth.

7. *D. baltimorensis*, griseo-ænea, thorace latitudine haud brevior, a basi antrorsum angustato lateribus omnino rectis, rude confluentur punctato, vitta utrinque obsoleta sublævi, medio parce punctato, sulco dorsali medio, elytris punctatis, striis versus suturam et apicem punctatis, interstitiis (internis lævibus) nigro-variegatis, ad apicem sensim attenuatis paulo prolongatis, bidentatis. Long. .60.

Mas sicut in priore; femina ignota.

*Buprestis baltimorensis* Herbst, Käfer, 9, 99; tab. 148, fig. 7.

One specimen, New York. Narrower than *D. obscura*, with a somewhat longer tail, but differing more conspicuously by the entirely straight sides of the thorax and the somewhat deeper and more punctured dorsal channel. It may, however, be a matter of doubt if it eventually ranks as a distinct species.

8. *D. soror*, griseo-ænea, thorace latitudine brevior antice angustato, lateribus late rotundatis, rude punctato confluentur ad latera, parcius ad medium, vitta obsoleta utrinque sublævi, sulco dorsali densius punctato, haud profundo, elytris rugose punctatis, striis versus suturam et apicem fortius punctatis, interstitiis (internis parce punctatis) nigro-variegatis, ad apicem sensim attenuatis, haud prolongatis, bidentatis. Long. .60.

One female, Pennsylvania. Also related to *D. obscura*, but with the apex of the elytra not prolonged, but only gradually narrowed, the striæ toward the suture more strongly punctured, the elevated spaces less regular, being rather the portions left between confluent punctures than oblong spaces: by the thorax being more equably punctured, with the dorsal channel stronger and more punctured, with the sides scarcely converging from the base to the middle; and finally by the sides of the abdomen being more densely punctured.

9. *D. lurida*, griseo-ænea, pruinosa, thorace latitudine paulo brevior, ante medium angustato, lateribus rotundatis, postice subsinuatis, lateribus confluentur, medio discrete punctato, vix obsolete canaliculato, ante scutellum foveato, elytris punctatis striis versus suturam distinctis, interstitiis spatiis obscuris variegatis, internis nitidis parce punctatis, postice oblique attenuatis haud prolongatis, bidentatis. Long. .58—.78.

Mas segmento ventrali ultimo truncato-emarginato; tibiis intermediis intus obtus angulatis. Femina ano tridentato, dente intermedio acuto.

*Buprestis lurida* Fabr. Ent. Syst. 1, 2, 190; Syst. El. 2, 190. Oliv. Ins. 32, 20, tab. 8, fig. 83. Herbst, Käfer, 9, 95, tab. 143, fig. 4. Lap. and Gory, 2, 105, tab. 27, fig. 144.

*Dicerca indistincta* Mels. Proc. Acad. 2, 143.

Common in the Middle, Southern and Western States. Nothing need be added to the diagnosis above given, as the species is well known and readily distinguished. The thorax especially of the smaller males is obliquely and broadly impressed each side behind the middle. According to Dr. Harris, the larva lives in hickory wood. (Ins. Inj. to veg. 43.)

## B.—d.

10. *D. lepida*, elongata, aureo-ænea, thorace latitudine brevior, antrorsum parum angustato, lateribus antice late rotundatis, confluentur punctato, trisulcato, vittis quatuor elevatis lævibus signato, elytris dense punctatis, stria suturali distincta, sutura elevata, interstitiis alternis spatiis elongatis nitidis elevatis ornatis, postice oblique longius attenuatis et paulo prolongatis, bidentatis. Long. .60.

Mas abdominis segmento ventrali ultimo tridentato, dente intermedio brevior late truncato. Femina ano tridentato, dente intermedio acuto.

Lec. Proc. Acad. Nat. Sc. 1857, 7.

*Buprestis pugionata* ‡ Lap. & Gory, 2, 99, tab. 26, 136.

Alabama, Prof. Haldeman; Pennsylvania, Rev. D. Ziegler. A very beautiful and distinct species. This and the next differ from those of the previous division by the metasternum being almost flat, while the prosternum is deeply sulcate, and the first segment of the abdomen is moderately so. The under surface is coppery, densely and coarsely punctured at the sides, nearly smooth, or sparsely punctured at the middle. The middle tibiæ are entirely straight in both sexes. The head has a V shaped callus between the eyes and two occipital ones with an intervening channel.

11. *D. spreta*, minus elongata, cinereo-ænea, pruinosa, thorace latitudine sesqui brevior, ad medium latior, lateribus antice rotundatis postice sinuatis, inæquali, rude punctato, callis nitidis ornato, medio polito, sulco dorsali antice profundo, postice subbiserialiter punctato, elytris dense punctatis, sutura elevata sublævi variegata, interstitiis callis oblongis obscuris elevatis ornatis, postice oblique attenuatis paulo prolongatis, bidentatis. Long. .60—.66.

Mas segmento ventrali ultimo tridentato, dente medio brevior lato truncato. Femina segmento ventrali ultimo tridentato, dente medio acuto.

*Buprestis spreta* Gory, Mon. Buprest. 4, 108, tab. 19, fig. 105.

*Dicerca molitor* Mels. Proc. Acad. Nat. Sc. 2, 143.

Middle States, not common. I incorrectly placed Melsheimer's references as synonyms to the next species in my index to Laporte and Gory's species, (Proc. Acad. 1857, 7,) being deceived by the wretched description of these last mentioned authors. The front between the eyes is marked with a smooth concave callus in the middle and a smaller one each side, forming an irregular elevated line: the thorax is deeply impressed each side behind the middle, and the surface is very uneven at the sides: the external costæ are irregular and interrupted, and the dorsal canal is deeper at the apex; the smooth costæ limiting it are broad. The middle tibiæ are straight in both sexes. The under surface is coarsely and densely punctured at the sides, nearly smooth in the middle: the metasternum is scarcely channeled, and the broad deep groove of the prosternum is coarsely punctured.

This species has a more robust form than the others of group B, being proportioned almost as *D. punctulata*, but differs from those of group C by the strongly bidentate elytra.

## B.—e.

12. *D. asperata*, cinereo-ænea, fronte late concava, carina transversa inter antennas signata, thorace latitudine sesqui brevior, lateribus antice rotundatis, postice parallelis, rude punctato, inæquali, vittis quatuor (externis angustis) nitidis lævibus, sulco dorsali plaga lævi interrupto, parte postica profundiore, elytris dense punctatis, striis punctis fortioribus notatis, interstitiis plagis paucis oblongis nigris notatis, postice oblique angustatis, vix prolongatis, bidentatis. Long. .62—.70.

*Buprestis asperata* Lap. & Gory, 2, 105, tab. 27, fig. 143.

*Dicerca impressifrons* Mels. Proc. Acad. Nat. Sc. 2, 144.

?*Buprestis americana* Herbst, Käfer, 9, 107, tab. 148, fig. 3.

Middle and Southern States, rare. The tip of the abdomen of the male is truncate and emarginate, and the middle tibiæ are armed internally with a large tooth. The female has the tip of the abdomen tridentate, and the middle tooth rounded at tip.

This species was first well described by Dr. Melsheimer; Laporte and Gory's figure and description are as usual very poor. The description by Herbst is somewhat indefinite, and it is difficult to know whether it should refer to this or to *D. chrysea* of the division C.

In addition to the characters given in the diagnosis I may mention that the head is transversely elevated between the eyes; the occiput has two smooth elevations; the external smooth vittæ of the thorax are narrow, but entire, the dorsal channel is punctured, and is interrupted by an elongate smooth elevation, behind which it is deeper than in front. The pectoral groove is very deep in the male, shallow in the female, and the antepectus is hairy in both sexes.

## C.—f.

13. *D. tenebrosa*, cinereo-ænea, vel obscure ænea, thorace latitudine plus duplo latiore, lateribus dilatatis, antice rotundatis postice sinuatis, rude punctato, postice utrinque late excavato, callis utrinque apicalibus et basilibus lævibus nitidis, sulco dorsali profundo costis lævibus definito, medio subinterrupto, elytris dense punctatis, interstitiis alternis spatiis oblongis elevatis nitidis variegatis, ad apicem prolongatis integris. Long. .57—.75.

Mas pectore late sulcato villosa, tibiis intermediis dente interno acuto armatis, segmento ventrali ultimo truncato-emarginato.

Femina pectore subglabro minus sulcato, segmento ventrali ultimo tridentato, dente intermedio obtuso, incisuris minutis definito.

*Buprestis (Stenuris) tenebrosa* Kirby, Fauna Bor. Am. 155.

Abundant at Lake Superior; according to Kirby found in Lat. 65° and in the Rocky Mountains. The suture in this and in all the following species is elevated. In addition to the characters given in the diagnosis, it may be mentioned that the under surface is copper coloured, coarsely and densely punctured on the sides, abdomen and prosternum, less densely on the metasternum and middle of the first segment of the abdomen: the divided portions of the mesosternum are coarsely, and tolerably densely punctured. The outer costæ of the thorax are interrupted so as to form on each side an apical and basal cal-

losity. A female from Newfoundland differs by the epipleuræ being green, the under surface of the prolonged extremity of the elytra, blue, and by the incisures between the anal teeth being more widely separated.

14. *D. hilaris*, cinereo-ænea, capite thoraceque viridi tinctis, hoc latitudine plus duplo brevior, lateribus dilatatis rotundatis, postice sinuatis, rude punctato, inæquali, vittis quatuor nitidis elevatis, externis subinterruptis, sulco dorsali callo parvo nitido interrupto, elytris punctatis, striis internis punctatis, interstitiis alternis spatiis oblongis nitidis elevatis ornatis, ad apicem paulo prolongatis integris, pectore late sulcato subglabro. Long. .60.

Mas tibiis intermediis rectis, segmento ventrali ultimo truncato emarginato. Femina segmento ventrali ultimo apice rotundato.

A male found at New York by Mr. H. Ulke; a female found at Brooklyn, N. Y., given me by Mr. Akhurst. This species is very similar to the preceding, and apart from the sexual characters differs only by the lateral vittæ of the thorax being narrower and less interrupted, not being divided into two rounded callosities, and by the elytra being less prolonged at the apex. The middle of the metasternum is also less punctured, the epipleuræ are tinged with green, and the under surface of the tips of the elytra with blue; the body beneath is golden coppery.

15. *D. lugubris*, supra nigro-ænea, thorace latitudine plus duplo brevior, lateribus dilatatis valde rotundatis postice sinuatis, rude punctato, inæquali, callo laterali magis distincto, vitta externa elevata interrupta, sulco dorsali profundo callo parvo medio interrupto, elytris fere opacis punctatis, striis fortius punctatis haud impressis, interstitiis 3 et 5 spatiis paucis nitidis elevatis, ad apicem longius prolongatis rotundatis. Long. .62.

Mas pectore late sulcato, subglabro, tibiis intermediis rectis, segmento ventrali ultimo truncato emarginato. Femina latet.

One specimen, Marquette, Lake Superior. Differs from the two preceding, as well by the deeper dorsal thoracic channel, as by the elytra being more equally punctured, with obvious rows of large punctures, with very few smooth elevated spaces, and also by the extremity being more prolonged.

The colour beneath is dark coppery, and the punctures are hardly less numerous in the middle than at the sides.

16. *D. chrysea*, læte æneo-cuprea, thorace latitudine duplo brevior, lateribus postice parallelis antice obtuse angulatis rotundatis, rude punctato, postice utrinque late excavato, callo laterali altero utrinque apicali costisque duabus nitidis, sulco dorsali callo medio interrupto, elytris dense punctatis, striis punctatis parum distinctis, interstitiis alternis spatiis elevatis nitidis variegatis, ad apicem breviter prolongatis subemarginatis. Long. .57—.70.

Femina segmento ventrali ultimo tridentato, dente medio latiore rotundato. Mas abdominis segmento ventrali ultimo truncato emarginato, tibiis intermediis intus obtuse angulatis.

Melsheimer, Proc. Acad. Nat. Sc. 2, 143.

Middle and Southern States, rare: the male was found in New Hampshire by Dr. Harris. From the other species which it resembles in sculpture it may be known by the body being more coarsely and less densely punctured beneath; the prosternum is less

punctured than in the species of the other groups of this division, is broadly sulcate, and has two smooth lines as in division B; the mesosternum has on its prominent divided portions only a few distinct punctures: the metasternum and middle of first ventral segment are sparingly punctured. The outer costa of the thorax in this species is so interrupted by the excavation as to leave a large anterior callus, while the posterior portion is very short and adheres to the basal margin.

17. *D. punctulata*, supra cinereo-nigra, subænea, thorace latitudine sesqui brevior, lateribus postice subangulatim rotundatis, dense punctato, costis quatuor angustis nitidis externis interruptis, postice utrinque late excavato, elytris basi thorace paulo latioribus dense punctatis, punctis magnis seriatis notatis, versus suturam subnitidis, interstitiis alternis spatiis paucis parvis elevatis nitidis, ad apicem subprolongatis rotundatis. Long. .50—.64.

Femina? segmento ultimo ventrali ad apicem rotundato. Mas latet.

Fitch, Trans. N. Y. State Agric. Soc. 1857, 706.

*Buprestis punctulata* Schönherr, Syn. Ins. App. 123. Lap & Gory, Mon. Buprest. 2, 99, tab. 25, fig. 134. Mels. Proc. Acad. Nat. Sc. 2, 145.

*Buprestis transversa* Say, Ann. Lyc. of New York, 1, 219.

New York to Georgia; not rare in pine forests. Beneath very shining black bronzed: pectoral channel shallow, not extending upon the first ventral segment; body coarsely and densely punctured at the sides, sparsely at the middle; prosternum with the groove more punctured than the elevations: mesosternum sparsely punctured.

#### C.—h.

18. *D. manca*, cinereo-ænea, thorace latitudine sesqui brevior, lateribus parum dilatatis, antice rotundatis, postice sinuatis, rude punctato, postice utrinque late excavato, callo laterali alteris utrinque ad apicem et basin lævibus, sulco dorsali callo medio interrupto, costisque parce punctatis definito, elytris punctatis striis punctatis versus suturam distinctis, interstitiis alternis spatiis elevatis et rugis transversis lævibus variegatis, ad apicem prolongatis truncatis. Long. .72.

Femina abdominis segmento ultimo apice rotundato. Mas latet.

One male found at New York by Mr. H. Ulke. Very similar in appearance to *D. tenebrosa* and *hilaris*, but apart from the sexual characters, the prosternum is altogether flat, not hairy, and the first segment of the abdomen is not sulcate. The mesosternum is coarsely punctured as in those species, but not so densely as in the next. The elytra are also rough with shining transverse elevated wrinkles, not seen in the two species mentioned.

19. *D. tuberculata*, ænea, thorace latitudine duplo brevior, lateribus valde dilatatis, antice valde rotundatis, postice sinuatis, rude punctato inæquali, carina brevi ad angulum posticum, callis ad apicem et basin costisque duabus sublævibus, sulco dorsali lato et profundo, callo parvo medio notato, elytris punctatis, striis internis grosse punctatis, interstitiis alternis spatiis elevatis nitidis ornatis rugis elevatis transversis pluribus connexis, postice breviter prolongatis rotundatis. Long. .52—.64.



Femina abdominis segmento ultimo apice rotundato. Mas segmento ventrali ultimo truncato emarginato, tibiis simplicibus.

Fitch, Trans. N. Y. State Agric. Soc. 1857, 706.

*Buprestis tuberculata* Lap. and Gory, Mon. Bupr. 2, 92; tab. 25, f. 135.

*Dicerca scobina* Chevr. Silbermann's Rev. Ent. 5, 66.

*Dicerca consobrina* Mels. Proc. Acad. 2, 145.

Maine, Dr. T. W. Harris: also occurs in New York. The body beneath is bright coppery, the prosternum flat, densely punctured, the mesosternum coarsely and tolerably densely, the feebly sulcate metasternum and middle of first ventral segment sparsely punctured, the latter not sulcate.

20. *D. lacustris*, nigro-fusca, subænea, thorace latitudine duplo brevior, lateribus modice dilatatis, antice rotundatis postice sinuatis, dense punctato, carina postica ad angulum, costisque quatuor sublævibus, externis late interruptis, postice utrinque late excavato, sulco dorsali profundo callo parvo medio notato, elytris dense punctatis, striis fortiter punctatis, interstitiis alternis spatiis paucis nitidis parum elevatis, postice longius prolongatis rotundatis. Long. .66.

Femina abdominis segmento ultimo apice rotundato. Mas latet.

?*Buprestis* (*Stenuris*) *tenebrica* Kirby, Fauna Bor. Am. 156.

Lake Superior, on Point Kewenaw. Resembles in general appearance *D. punctulata*, but the sides of the thorax are dilated, and therefore more rounded, and the elytra are considerably prolonged at the apex. The body beneath is dark coppery, coarsely and densely punctured, except on the metasternum and middle of the first ventral segment, where the punctures are less dense. The prosternum is nearly flat, the metasternum broadly slightly concave, the first ventral segment not sulcate.

I am doubtful in regard to the propriety of regarding this as Kirby's species, because he states that the thorax is without smooth elevations, and that the smooth spaces of the elytra are near the outer margin.

21. *D. bifoveata*, atra, vix ænea, thorace latitudine duplo latiore, lateribus dilatatis antice valde rotundatis postice breviter sinuatis, rude punctato, carina postica ad angulum, callis ad apicem et basin costisque duabus sublævibus, utrinque pone medium profunde excavato, sulco dorsali profundo, callo medio interrupto, elytris dense punctatis, striis fortiter punctatis, interstitiis alternis spatiis paucis nitidis subelevatis, postice vix prolongatis subtruncatis. Long. .51.

Femina abdominis segmento ultimo ventrali minute biinciso.

One specimen, Lake Superior. Also resembles the last species, but the elytra are less prolonged, the thorax is more dilated on the sides. The body beneath is coarsely but not very densely punctured, the prosternum slightly sulcate, the mesosternum very coarsely punctured, the metasternum a little less punctured, broadly concave; first ventral segment less punctured at the middle, sulcate only at the base.

22. *D. crassicollis*, obscure cinereo-ænea, thorace latitudine plus duplo brevior, lateribus valde dilatatis,

postice sinuatis, pone medium utrinque late excavato, costis quatuor, externis interruptis, sulco dorsali profundo callo parvo sæpe notato, elytris dense punctatis, striis fortiter punctatis, interstitiis alternis spatiis nitidis elevatis ornatis, postice breviter prolongatis, truncatis. Long. .60—.68.

Mas abdominis segmento ultimo ventrali apice rotundato. Femina tridentato, dente medio angusto obtuso.

Lec. Report of Pac. R. R. Expl. and Surveys, 47th Par. insects, 45.

Washington Territory, Dr. Suckley, California, Mr. J. Child. Resembles in appearance *D. tenebrosa*, but the thorax is much more dilated on the sides. The body beneath is purple bronzed, coarsely punctured, with the metathorax and middle of first ventral segment more sparingly punctured. Pectoral groove deep, extending on the first ventral segment, mesosternum very coarsely, but not densely punctured.

#### C.—k.

23. *D. pectorosa*, nigro-fusco-ænea, thorace latitudine plus duplo brevior, lateribus valde rotundato-dilatatis, postice breviter sinuatis, inæquali grosse punctato, bicostato, sulco dorsali magno, elytris rugosis et dense punctatis, striis foveatim punctatis, interstitiis alternis spatiis nitidis parum elevatis parvis variegatis, postice longius prolongatis rotundatis. Long. .64.

Mas segmento ventrali ultimo truncato, tibiis intermediis rectis. Femina latet.

Lec. Pacific R. R. Expl. & Surveys, vol. ix. (49th Par.) Insects, 45.

One male, Oregon, Dr. Suckley. Body beneath dark brassy, very coarsely punctured. Prosternum with two smooth, strongly elevated costæ, pectoral groove broad, deep and densely punctured: mesosternum coarsely punctured: metasternum almost as strongly sulcate as the prosternum, sparsely punctured at the middle: first ventral segment broadly sulcate, sparsely punctured at the middle: last ventral segment with two narrow costæ, between which at the tip is a very short and smaller one: the apex is truncate and marked with four deep subapical foveæ.

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The following species belonging to the genus is unknown to me:

24. *D. Lecontei*, 'cinereo-argentata, thorace inæquali, elytris punctatis, maculis nigro-velutinis.' Long. .33.

*Buprestis Lecontei* Gory, Mon. Buprest. 4, 107, tab. 18, fig. 104.

D'un cendré argenté. Antennes cuivreuses. Tête finement ponctuée, avec de petites élévations irrégulières, et recouverte d'une pubescence argentée. Corselet presque carré, avec ses angles postérieurs très aigus, couvert d'élévations irrégulières, dont la plus forte est sur son milieu, avec une profonde impression dessus. Elytres granuleuses, avec des rangées de points disposés en lignes longitudinales, qui les font paraître striées, surtout près de la suture: elles sont rebordées près de leur base, et ont en outre quelques taches d'un noir velouté. Cette charmante espèce . . . doit être placée après la *Punctulata*.'

#### PECILONOTA Esch.

The species of this genus, present all the essential characters of *Dicerca*, except that

the scutellum is very transverse, and truncate, with the posterior angles well marked. Lacordaire adds other slight differences, but some of them are now to be rescinded, since the elytra are caudate in *P. cyanipes*, and the prosternum is not canaliculate in several species of *Dicerca*. The characters drawn from the antennæ, of which the 3rd joint is twice as long as the 2nd, and the 4th is triangular, and nearly as broad as the 5th, still continue good. Our species are all marked with a smooth dorsal thoracic line, the antennal cavities are connected by a slight ridge, and the prosternum is hairy, characters never seen in *Dicerca*:

Elytra prolongata, integra	-	-	-	-	-	-	<i>P. cyanipes.</i>
(Elytra prolongata bidentata	-	-	-	-	-	-	<i>P. erecta.</i> )
Elytra haud prolongata, bidentata.							
Elytra depressa	-	-	-	-	-	-	<i>P. ferrea.</i>
Elytra æqualiter convexa;							
Abdomen apice emarginatum	-	-	-	-	-	-	<i>P. thureura.</i>
Abdomen (♂) apice integrum	-	-	-	-	-	-	<i>P. debilis.</i>

1. *P. cyanipes*. *Buprestis cyanipes* Say, Journ. Acad. Nat. Sc. 3, 164.

Missouri, Mr. Maurice Schuster; New York, Mr. Akhurst.

2. *P. erecta*. *Buprestis erecta* Gory & Lap. 4, 110; tab. 19, f. 108.

Unknown to me; it seems related to the preceding, but the sides of the thorax of the figure are more rounded, and the tips of the elytra are bidentate.

3. *P. ferrea*, depressa, griseo-ænea, capite linea occipitali lævi, thorace transverso antrorsum angustato, lateribus medio subangulatis, costa dorsali lævi, callo utrinque antico, alteroque basali parum distincto, grosse subconfluenter punctato, versus latera late impresso, elytris striis hic inde præcipue introrsum distinctis punctatis, spatii magnis punctatis, alterisque elevatis lævibus obscurioribus notatis, postice attenuatis bidentatis. Long. .6.

Mas abdominis segmento ultimo profunde et late emarginato; prosterno hirtio.

*Dicerca ferrea* Mels. Proc. Acad. 2, 144.

One specimen from the Western States, Mr. Wild; others were found by Mr. Schuster in Missouri. This species differs from *P. thureura* by the narrow form, and more flattened thorax and elytra: the sides of the thorax diverge a little from the base, so that the widest part is about the middle.

4. *P. thureura*. *Buprestis thureura* Say, New Ins. of Louisiana, 3.

*Buprestis costicollis* Gory & Lap. 4, 109, tab. 19, f. 107.

Very abundant in Louisiana. The prosternum of the male is very hairy, and the last segment of the abdomen broadly and deeply emarginate. In the female the same segment is very slightly emarginate.

5. *P. debilis*, cupreo-ænea, thorace subtransverso, a basi antrorsum angustato, lateribus late rotundatis, rude punctato, costa dorsali latiuscula lævi, alteraque utrinque vix distincta, elytris striatis, præcipue confertim punctatis, spatii obscuris lævibus variegatis, ad apicem truncatis vix bidentatis, abdominis apice integro. Long. .48.

One specimen, Baltimore, Mr. Wild. I was inclined to believe this a very small specimen of *P. thureura*, and on comparison I find no satisfactory character except size upon which to rest its distinction. Nevertheless the last joint of the abdomen is rounded at the tip, which distinguishes it at once from either sex of the preceding. From the absence of hair on the prosternum, I suppose that the specimen is a female.

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Kiesenwetter, (Ins. Deutsch, 4, 50) states that the first and second ventral segments of the abdomen are not connate, but after examining all of our species, I find no grounds for this assertion, those segments being united as usual, with the suture, however, less obliterated at the middle than is customary. The diagnosis of the genus as given by him should also be modified, so as to exclude the sexual character drawn from the anterior tibiæ of the male, since in a considerable group of the genus (represented in Europe by *A. splendida*) this distinction between the sexes is not found.

Our species may be arranged as follows.

A. Prosternum haud vel vix breviter sulcatum; tibiæ anticæ maris intus emarginatæ et unco reflexo apicali armatæ: (Sp. 4 & 5 exceptis.)

- |  |   |   |   |   |   |           |
|--|---|---|---|---|---|-----------|
| a. Abdomen articulo primo haud sulcato | - | - | - | - | - | Sp. 1—6.  |
| b. Abdomen articulo primo sulcato      | - | - | - | - | - | Sp. 7—15. |

B. Prosternum late sulcatum; tibiæ anticæ sexus utriusque simplices.

- |   |   |   |   |   |            |
|---|---|---|---|---|------------|
| c. Elytra costis quatuor sutura margineque elevatis | - | - | - | - | Sp. 16—20. |
| d. Elytra punctato-striata                          | - | - | - | - | Sp. 21—23. |

A.—a.

1. *A. rufipes* Dej. Cat. 88. *Buprestis rufipes* Fabr. Ent. Syst. 1, 2, 188: Syst. El. 2, 188. Oliv. 32, 16, tab. 7, f. 73. Say, Am. Ent. pl. 26. Lap. & Gory, 2, 139, tab. 34, 191.

New York to Louisiana. In the male the last segment of the abdomen is broadly truncate and bidentate: in the female it is sinuous, and also bidentate, with a smaller medial acute tooth.

2. *A. Gibbsii* Lec. Pac. R. R. Reports, 47 Par. Ins. 42, tab. 1, f. 17.

Steilacoom, W. T., Mr. George Gibbs. The tip of the abdomen of the male is truncate, not bidentate.

3. *A. sexplagiata*, læte viridi-ænea, thorace confertim punctato, obsolete canaliculato, antrorsum angustato, clytris nigris, macula oblonga magna antica, alterisque transversis posticis duabus flavis, margine basali viridi-æneo, profunde striatis apice bidentatis. Long. 43—54.

Vermont and Northern New York. Head, thorax, body and legs of a uniform bright golden green. Antennæ obscure bronze. Head and thorax densely punctured, the for-

mer with a short occipital impressed line, the latter obsoletely channeled, wider than long, gradually narrowed from the base forwards, slightly rounded on the sides. Elytra purple black, with the basal margin golden green: they are ornamented with a large oblong spot at the base, extending one third the length, and nearly attaining the suture: it sometimes emits a slender external branch so as to enclose the humeral callus: just behind the middle is a transverse sinuous spot sometimes reaching the suture, and then connected with the third spot, which is near the tip. The striae are deep and slightly punctured: the intervals convex, smooth, with a few small scattered punctures, especially towards the base and sides: the tip is truncate and bidentate. The tip of the abdomen of the female is broadly and very slightly emarginate, with the angles distinct, though not prominent. The male is unknown.

4. *A. Langii* Lec. Pac. R. R. Report, 47th Par. Ins. 42: tab. 1, f. 16. *Buprestis Langii* Mann. Bull. Mosc. 1843, 237.

Oregon and Washington Territories; Dr. J. G. Cooper, and Mr. George Gibbs. Allied to the next species, but narrower and more depressed, with the striae of the elytra deeper, and more punctured, and the intervals narrower and more convex. The elytra are usually immaculate. The tip of the abdomen of the female is truncate; of the male broadly rounded, sinuate each side, with the angles slightly prominent. Anterior tibiae simple.

5. *A. fasciata* Dej. Cat., 88. *Buprestis fasciata* Fabr. Ent. Syst. 1, 2, 191; Syst. El. 2, 191: Oliv. Ins. 32, 21, tab. 9, f. 92: Herbst, Käfer, 9, 162, tab. 145, f. 12. Say, Am. Ent. tab. 26: Lap. & Gory, 2, 144, tab. 35, 198: Kirby, Fauna Bor. Am. 154. *Buprestis sexmaculata* Herbst, Käfer, 9, 163, tab. 148, f. 5.

Not rare, especially in the northern portions of the Atlantic States; varies in colour from green to blue, and also in the size of the markings of the elytra. The tip of the abdomen of the female is truncate; in the male it is truncate and bisinuate: the anterior tibiae are simple.

6. *A. confluens*. *Buprestis confluenta* Say, Journ. Acad. 3, 159: Am. Ent. tab. 26.

Kansas and Nebraska. In the male a broad yellow vitta extends from the anterior margin of the prosternum almost to the end of the first segment of the abdomen: the last segment of the latter is semicircularly emarginate, and has a small yellow spot each side about the middle. In the female the tip is feebly emarginate, without prominent angles.

#### A.—b.

7. *A. lineata* Dej. Cat., 88. *Buprestis lineata* Fabr. Ent. Syst. 1, 2, 192: Syst. El. 2, 192. Oliv. Ins. 32, 28, tab. 8, fig. 80.

Var. *Buprestis maculipennis* Gory, Mon. Bup. 4, 119, tab. 21, 117.

*B. inconstans* Mels. Proc. Acad. 2, 146.

Middle and Southern States not rare. Varies very much in the fulvous markings of

the elytra, which are normally two broad vittæ upon each; the extreme variation is where the outer vitta is broken into three spots, and the inner one into two; the two anterior spots are then connected by a transverse line forming a hamate spot. The tip of the abdomen in the male is truncate, with a little tooth each side; in the female, it is broadly rounded, but the same teeth are seen. The under surface is dull bronze, with the head and anterior margin of the prosternum fulvous.

8. *A. læviventris* *Lec.* Pac. R. R. Reports, 47th Par. Ins. 43.

Northern California, Mr. Child. Remarkably distinct from the other species of this group by the feeble punctuation of the abdomen: the tip of the abdomen in the female is broadly rounded, with an acute tooth each side.

9. *A. Nuttalli*. *Buprestis (Anoplus) Nuttalli* Kirby, Fauna Bor. Am. 152.

Lake Superior, one female: found according to Kirby in lat. 65°, and in the Rocky Mountains. I was inclined to consider Kirby's species as identical with *A. consularis*, but upon reviewing the matter, I find that no mention is made in his description of the sternal yellow markings so conspicuous in *A. consularis*, nor is the thorax said to be sinuate on the sides, a character very obvious in the last mentioned species. I therefore consider, under the present name, a species which is broader than *A. consularis*, with the sides of the thorax broadly rounded, and margined with yellow; the striæ of the elytra are deeper, and the intervals more distinctly punctured; the spots are two in number, of a reddish colour, with some very small lines near the base: the prosternum is immaculate; the coxæ and femora are partly red; the abdomen has a lateral red spot on each segment, the antepenultimate and penultimate have two discoidal spots, and finally the broad groove of the first segment becomes indistinct posteriorly, while in *A. consularis* it extends to the hind margin of the segment. The tip of the abdomen is truncate in the female, without prominent teeth.

10. *A. consularis* *Dej.* Cat. 88. *Buprestis consularis* Gory, Mon. Bupr. 4, 120, tab. 21, 118.

Northern New York, abundant. The sinuate side of the thorax, the spots of the elytra always broken up into little lines, the spotted prosternum, and the groove of the base of the abdomen extending the whole length of the first segment will distinguish this from the preceding. The last segment of the abdomen is broadly truncate in both sexes, with the angles minute, but distinct.

11. *A. alternans*, nigro-ænea nitida, thorace antrorsum angustato lateribus subsinuato, rupe punctato, linea dorsali, callisque nonnullis lævibus, elytris striatis, vix parce punctatis, interstitiis alternis convexis, macula ante medium, altera mox pone medium, lineolisque pone basin paucis pallidis, apice truncatis, subdentatis, abdomine punctato, segmento 1mo sulcato, 3io et 4to guttis discoidalibus duabus, ultimo macula utrinque transversa rubris ornatis. Long. .75.

One female, Santa Fe, Mr. Fendler. Also nearly related to *A. consularis*, but broader, with the sides of the thorax only slightly sinuous. The elytra, as in it, are marked with only a few scattered punctures. The only spots seen beneath are two small discoidal ones on the antepenultimate and penultimate ventral segments, and a transverse one each side of the last segment, extending to the margin. The tip is truncate, with the angles not prominent.

12. *A. subornata*, latiuscula, supra nigro-ænea, vel viridiænea, fronte antice fulvo-maculata, thorace antrorsum angustato, lateribus rectis, punctato, linea dorsali angusta lævi, elytris apice fere rotundatis, striatis, interstitiis punctis paucis notatis, alternis paulo elevatis, abdominis segmento 1mo late, 2 et 3 obsolete sulcatis, 2-4 utrinque maculis duabus fulvis plus minusve conjunctis, 5to maculis duabus transversis ornato. Long. .7—8.

California and New Mexico. Nearly related to the next, but broader, with the sides of the thorax straight, the dorsal line narrower and the other elevations very indistinct: the 3d and 4th segments of the abdomen and sometimes the second, have moreover two discoidal orange-coloured spots connected more or less with the lateral ones. The punctuation of the middle of the abdomen is less strong than in the next, and the 2nd and 3rd segments are feebly sulcate. The last segment of the female is truncate, with scarcely prominent angles.

The specimen from New Mexico is black bronzed, that from California is of a tolerably brilliant green above and bronzed beneath.

13. *A. maculiventris*. *Buprestis maculiventris* Say, Long's Exp. to St. Peter's River, 2, 272. *B. sexnotata* Lap. & Gory, Mon. Buprest. 2, 129, tab. 32, f. 178.

Pennsylvania, Lake Superior and Newfoundland. The sides of the thorax are rounded and suddenly incurved posteriorly. The last ventral segment of the abdomen is broadly rounded, with a small but distinct tooth each side.

The head has usually only a small yellow spot above the antennæ. In one female there is besides a large trilobed spot between the antennæ, and a spot each side adjoining the upper part of the eye: in it the last ventral segment is broadly truncate, without any teeth, and I am inclined to believe that it will eventually prove to belong to a distinct species.

Laporte and Gory's figure and description represent a brighter coloured individual than any before me, but not more so than the variety of the preceding species above mentioned.

14. *A. rusticorum*, nigro-ænea, subnitida, capite guttis fulvis notato, thorace latitudine brevior, antrorsum angustato, lateribus late rotundatis postice incurvis, punctato, linea dorsali callisque pluribus lævibus, angulis anticis fulvis, elytris apice subtruncatis striatis, interstitiis punctis paucis notatis, alternis paulo elevatis, abdomine fortiter punctato, segmento 1mo sulcato, ultimo maculis duabus fulvis ornato. Long. .65—.92.

*Buprestis (Anoplis) rusticorum* Kirby, Fauna Bor. Am. 151.

*Buprestis rusticorum* Gory, Mon. Bupr. 4, 117, tab. 20, f. 115. Mannerheim, Bull. Mosc. 1843, 237.

Oregon and Washington Territories; abundant. Nearly allied to the preceding, but differs by the sides of the thorax being considerably more rounded, and by the head having spots between the antennæ, sometimes united into a trilobed spot, and at the upper part of the eyes: these latter spots sometimes extend inward so as to form an interrupted band. The lateral spots of the abdomen are small and frequently wanting except on the last segment, where they are large and frequently unite to form a transverse band.

The apex of the abdomen of the male is broadly emarginate, and the anal plate is subacuminate: the spots of the head in my specimen are larger and confluent, so that the face is fulvous, with two black frontal spots, but this is probably an individual, and not a sexual character.

In the female the apex of the abdomen is truncate, without prominent angles.

Kirby states in his description that there are two distinct anal teeth: this character would throw some doubt upon the correctness of my determination. There is however no other to which his description will apply, and the discrepancy can be understood if it be supposed that his specimen was a male.

15. *A. paganorum*. *Buprestis (Anoplis) paganorum* Kirby, Fauna Bor. Am. 152.

Found in Lat. 54°; unknown to me, but probably, from its resemblance to the preceding, belonging to this division: from the allied species, it differs by the thorax being constricted anteriorly, and furnished with a dorsal channel.

#### B.—c.

16. *A. sulcicollis*, supra obscure æneo-iridis, latiuscula convexa, thorace grosse dense punctato, profunde canaliculato, antrosum angustato, lateribus medio fere angulatis, postice sinuatis, elytris dense rugose punctatis, sutura, costula scutellari, margine, costisque 4 valde elevatis lævibus, 3ia valde abbreviata, ad apicem subprolongatis, truncatis, subtus viridi-ænea. Long. .62.

One specimen, Lake Superior. Related to the next, but much stouter and more convex, like *A. lata*, but from that as from the others it is readily distinguished by the deeply channelled thorax, which is angulated on the sides, and by the elytra obliquely narrowed and slightly prolonged at the apex, with the 3rd costa very short. The tip of the abdomen is broadly rounded.

17. *A. striata*. *Buprestis striata* Fabr. Ent. Syst. 1, 2, 191; Syst. El. 2, 192. Oliv. Ins. 32, 15, tab. 7, fig. 77. Herbst, Käfer, 9, 187, tab. 140, fig. 8. Lap. & Gory, Mon. Buprest. 2, 147, tab. 37, fig. 202.

*Buprestis impedita* Say, Trans. Am. Phil. Soc. 6, 160. Lap. & Gory, 2, 148, tab. 26, fig. 203.

‘*Buprestis aurulenta* Linn.’ Oliv. Ins. 32, 18, tab. 9, 98. Herbst, Käfer, 9, 129, tab. 149, fig. 9. Lap. & Gory, 2, 146, tab. 26, 200.

*Ancylochira aurulenta* Kiesenwetter, Ins. Deutschl. 4, 57.



Middle States, Canada, and Lake Superior. Varies in brilliancy of colour; the second synonym belongs to the dull-coloured variety. The male is narrower than the female, and has the tip of the abdomen more distinctly truncate, or rather, more broadly rounded.

I cannot adopt the views of those authors who consider this species as *B. aurulenta* Linn. The description (Syst. Nat. 1, 661) makes no mention of the elytral costæ, and applies more nearly to *A. decora* than to the present. In this state of confusion the name should be either applied to that species, or dropped entirely.

18. *A. lauta* Lec. Proc. Acad. Nat. Sc. 7, 17; Pac. R. R. Reports, 47th Par. 43.

Oregon and Washington Territories, abundant. The male is a little narrower than the female, but the tip of the abdomen is subtruncate in both.

19. *A. radians* Lec. Proc. Acad. Nat. Sc. 7, 17; Pac. R. R. Reports, 47th Par. Ins. 44.

One specimen, Oregon, Dr. Cooper. Shaped like the male of *A. lauta*, but known by the very hairy front and prosternum. The tip of the abdomen is subtruncate.

20. *A. adjecta* Lec. Proc. Acad. Nat. Sc. 7, 17; Pac. R. R. Reports, 47th Par. Ins. 43.

One specimen, Oregon, Dr. Cooper. Broader even than the female of *A. lauta*, with intermediate elevated costæ on the elytra; the tip of the latter is distinctly bidentate. The abdomen is less strongly punctured, and scarcely truncate.

#### B.—d.

21. *A. decora* Dej. Cat. 88. *Buprestis decora* Oliv. Ins. 32, 18, tab. 8, fig. 82. Fabr. Ent. Syst. 1, 2, 189; Syst. El. 2, 189. Herbst, Käfer, 9, 128, tab. 149, f. 8. Lap. & Gory, Mon. Buprest. 2, 145, tab. 36, fig. 199. *Buprestis Salisburyensis* Weber, Ent. Bemerk. 31; Obs. Ent. 73. Herbst, Käfer, 9, 174, tab. 148, fig. 8. ? *Buprestis aurulenta* Linn. Syst. Nat. 1, 661.

Middle and Southern States, not rare. The tip of the abdomen is truncate, subsinuate and bidentate in the male, subtruncate in the female.

22. *A. ultramarina*. *Buprestis ultramarina* Say, Trans. Am. Phil. Soc. 6, 160.

One female, Georgia. Say's description was made only from the elytra, but the species I refer to under this name, is of a broader form than *A. decora*, with the intervals of the elytra less irregularly punctured, especially towards the suture, with the tips rounded, or hardly truncate, not bidentate as in that species. The abdomen is broadly rounded at the apex.

23. *A. aprieans*. *Buprestis aprieans* Herbst, Käfer, 9, 125, tab. 145, fig. 9.

*Buprestis Bosci* Lap. & Gory, Mon. Buprest. 2, 146, tab. 36, fig. 201.

Southern States, rare. The tip of the abdomen is truncate and subsinuate in the male, broadly rounded in the female.

CINYRA Lap. (emend. Lac.)

1. *C. gracilipes*, elongata, obscure ænea, thorace latitudine vix brevior, punctato trisulcato, sulco medio latiore et profundo, elytris leviter striatis, punctatis, obsolete biimpressis, interstitiis alternis paulo elevatis, apice bidentatis. Long. .40—.44.

Mas tibiis anticis intus serratis.

Femina tibiis simplicibus.

*Dicerca gracilipes* Mels. Proc. Acad. Nat. Sc. 2, 145.

Pennsylvania to Wisconsin, rare. The head is punctured, with a smooth spot between the eyes: the lateral grooves of the thorax are less deep than the medial one, and the sides are perfectly straight. The body beneath is bright copper-coloured, densely and coarsely punctured on the trunk and sternum, more finely and less densely on the abdomen. The last ventral segment is a little more subtruncate in the female, and in both there is a little submarginal transverse elevated line.

2. *C. erythropus*, "viridi-ænea, thorace viridi-purpureo, elytris punctato-striatis, corpore subtus viridaurato, pedibus ferrugineis." Long. .40.

*Buprestis (Cinyra) erythropus* Gory, Mon. Bupr. 4, 126, tab. 22, fig. 124.

Unknown to me: perhaps from tropical America. The characters are however so distinct by the colouring, that it will be readily recognised by the above diagnosis, should it occur in our territory. The characters given in the description of Gory, with the exception of colour, are those of the preceding species.

GROUP III.

While adhering very closely to the previous one by its general structure, this group is at the same time sufficiently marked to enable it to be readily distinguished. The chief characters separating it are: the small rounded or transverse scutellum, and the sharp pointed prosternum, with acute lateral angles behind the coxæ, as in *Chrysobothris*: the mesosternum is separate from the metasternum, and divided by a narrow fissure in which is fitted the acute tip of the prosternum. The antennal pores are terminal: the mentum is partly membranous in one genus, entirely corneous in the other. The tarsi are slender, but slightly lobed, and the ungues are entire.

Mentum antice coriaceum; prothorax basi sinuatus	-	-	-	<i>Melanophila</i> .
Mentum totum corneum; prothorax basi truncatus	-	-	-	<i>Anthaxia</i> .

MELANOPHILA Esch.

Our moderately numerous species may be grouped as follows.

- |  |   |   |   |   |   |   |          |
|--|---|---|---|---|---|---|----------|
| A. Thorax dense punctatus, callis nitidis ornatus                      | - | - | - | - | - | - | Sp. 1.   |
| B. Thorax haud callosus; corpus planiusculum, supra glabrum.           |   |   |   |   |   |   |          |
| a. Corpus supra subtiliter punctatum                                   | - | - | - | - | - | - | Sp. 2—6. |
| b. Corpus fortius punctatum; thorax rugosus                            | - | - | - | - | - | - | Sp. 7—8. |
| C. Thorax haud callosus, corpus cylindricum, supra breviter pubescens. | - | - | - | - | - | - | Sp. 9.   |

## A.

1. *M. miranda*. *Phænops mirandus* Lec. Proc. Acad. Nat. Sc. 7, 83.

Fort Union, New Mexico, collected by Major Sibley.

## B.—a.

2. *M. consputa*, atra, depressa, opaca, thorace tenuiter canaliculato, subtilius transversim rugoso, lateribus punctato et lineis elevatis aciculato, angulis posticis longius carinatis, elytris postice oblique angustatis, confertim granulato-punctatis, guttis utrinque quatuor obscure croceis ornatis; subtus æneo-nigra. Long. .47.

Lec. Pac. R. R. Expl. and Surveys, Vol. 11, Ins. 47° Par. 44.

Northern California, collected by Mr. J. Child, and given me by Mr. Rathvon. Nearly of the form of *M. longipes*, but narrower: tips of elytra separately rounded, not acuminate: the spots are so arranged as to form with those of the opposite elytron a figure rounded anteriorly, with a straight posterior outline.

3. *M. notata*. *Apatura notata* Lap. & Gory, Mon. Buprest. 1, 4, tab. 1, fig. 5.

*Melanophila lutesignata* Ziegler, Proc. Acad. Nat. Sc. 2, 267.

Middle and Southern States. Varies very much in the size of the yellow spots, the lateral one is sometimes large and triangular, sometimes only represented by two small round spots: the posterior spot is also sometimes divided into two. The apex of the elytra is slightly acuminate.

4. *M. longipes* Gory, Mon. Buprest. 4, 75, tab. 13, fig. 74.

*Buprestis longipes* Say, Journ. Ac. Nat. Sc. 3, 164.

*Apatura appendiculata* ‡ Lap. & Gory, Mon. Buprest. 1, 8, tab. 2, fig. 14.

*Buprestis* (*Oxypteris*) *appendiculata* Kirby, Fauna Bor. Am. 160.

*Melanophila immaculata* Gory, Mon. Bupr. 4, 74, tab. 13, fig. 72.

Pennsylvania, Kansas, Lake Superior. Very closely related to the European *M. appendiculata*, but on comparison the thorax is less rounded on the sides, which are less sinuate posteriorly. As in that species the sculpture is very indistinct at the middle, and the small carina at the basal angles is nearly parallel with the margin. The elytra are more gradually narrowed behind, and the apex is rectilinearly attenuated from the suture while in *M. appendiculata*, the inner outline of the tip is concave, though not so much so as in the next species. The tip of the abdomen, as in the others of this group, is slightly emarginate, with the angles acute.

5. *M. atropurpurea*. *Buprestis atropurpurea* Say, Journ. Acad. Nat. Sc. 3, 160.

Texas and Kansas. Varies much in size, and although very similar to the preceding, it differs by the following characters. The punctuation of the middle of the thorax is distinct, the sides are more broadly rounded, and not at all sinuate behind: the basal carinæ are shorter and diverge rapidly from the margin: finally, the elytra are more suddenly narrowed behind, and the tips are concavely attenuated from the suture, and armed with a short but very acute spine, while in the preceding they are merely pointed.

6. *M. opaca*, atra opaca, thorace latitudine vix brevior, lateribus ante medium obtuse angulatis, postice haud sinuatis, angulis posticis obtusis carina brevi margini approximata, punctis versus medium fere obsoletis, canaliculato, ante scutellum foveato, elytris granulato-punctatis late impressis, postice sensim attenuatis, apicibus intus paulo concavis spina brevi armatis. Long. .50.

One specimen, Georgia. Differs from both the preceding by the sides of the thorax being obtusely angulated before the middle, at the widest part: the elytra are as in *M. appendiculata*, that is to say with a short not very acute spine at the apex, which is concavely attenuated on the sutural side. From *M. appendiculata* it differs chiefly by the sides of the thorax falling obliquely on the base, thus making the posterior angles obtuse.

#### B.—b.

7. *M. Drummondi*, nigro-ænea, depressa, thorace latitudine sesqui brevior, lateribus rotundatis, subcanaliculato, postice ad medium et latera late foveato, disco rugis transversis subtilibus insculpto, lateribus punctatis et longitudinaliter rugosis, elytris rugose punctatis, obsolete tricostatis, guttis flavis quatuor sæpe deficientibus ornatis. Long. .31—40.

*Buprestis (Trachypteris) Drummondi* Kirby, Fauna Bor. Am. 159.

*Apatura Drummondi* Lap. & Gory, Mon. Buprest. 1, 3, tab. 1, fig. 3: Mann. Bull. Mosc. 1843, 236.

*Melanophila guttulata* ‡ Mann. Bull. Mosc. 1853, 221.

Oregon and Washington Territories, abundant, straying into California and Russian America. Closely allied to the next, which however differs by the thorax being much more coarsely rugous and with distinct punctures all over the surface, and by the elytra being entirely destitute of vestiges of three costæ. The Siberian *M. guttulata* on comparison is found to be different from both: the thorax is rugous as in *M. Drummondi*, but its whole surface is besides more densely and finely punctured than in the next species and the sides are also less rounded: the elytra are more densely punctured with hardly perceptible traces of costæ. Thus as in the preceding group the species of the other continent holds an intermediate place between two of our species.

All three vary greatly in the size and number of the spots, which are frequently entirely absent.

8. *M. fulvoguttata*, nigro-ænea, depressa, thorace latitudine sesqui brevior, lateribus rotundatis, tenuiter

canaliculato, postice foveato, minus dense sat fortiter punctato, minus subtiliter rugoso, (rugis mediis transversis, lateralibus longitudinalibus,) elytris rugose punctatis, guttis flavis quatuor sæpe deficientibus. Long. 36—48.

*Buprestis fulvoguttata* Harris, New Engl. Farmer, 1829, p. 2: Ins. Inj. Veg. 44.

*Apatura octospilota* Lap. & Gory, Mon. Buprest. 1, 4, tab. 1, fig. 6.

*Apatura croceosignata* Lap. & Gory, Mon. Buprest. 1, 5, tab. 1, fig. 4.

*Apatura decolorata* Lap. & Gory, Mon. Buprest. 1, 5, tab. 1, fig. 7.

Middle and Northern parts of the United States, very abundant at Lake Superior. The variations in size or absence of spots are sufficient to account for Laporte's synonyms. The tip of the abdomen is broadly rounded, and subtruncate.

### C.

9. *M. aeneola*, ænea, elongata modice convexa, capite dense rugose punctato, thorace latitudine brevior, antrosum paulo angustato, dense punctato, ante scutellum foveato, elytris dense rugose punctatis pube brevi pallida parce indutis, abdomine virescente, nitido parce punctulato. Long. 18—20.

Melsheimer, Proc. Nat. Sc. 2, 146.

*Melanophila metallica* Mels. Proc. Acad. Nat. Sc. 2, 146.

Middle and Southern States. This species differs from all the preceding ones by the tip of the abdomen having a small transverse elevated line very near the margin, as in *Cinyra*, the tip itself being slightly truncate.

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*Apatura caudata* Lap. & Gory, Mon. Buprest. 1, 8; tab. 2, 13, does not belong to this genus; the figure represents a species of *Dicerca*, and the description is comparative with *D. acuminata*. It is probably identical with my *Dicerca caudata*.

### ANTHAXIA Esch.

#### A. Elytra fortius granulata.

##### a. *Capite punctato breviter piloso*.

1. *A. expansa*, lata, depressa, atra, opaca, vix ænescens, thorace latitudine duplo brevior, lateribus valde rotundatis, reticulatim punctato, elytris thorace haud latioribus, confertim granulatis, fortius marginatis, parallelis, postice suboblique attenuatis et rotundatis. Long. 28.

Lec. Pac. R. R. Expl., Vol. 11., Insects 47th Par. 44.

Oregon. Closely related to the three following, but distinguished by the granules of the elytra being less elevated, and by the sculpture of the thorax. The latter is twice as wide as its length, very much rounded on the sides, with all the angles rounded: the disc is very slightly convex at the middle, and becomes broadly concave at the sides; there are four very faint foveæ placed transversely, and a slight vestige of a dorsal channel: the surface is covered with very shallow punctures, forming the usual reticulation, but very faint, and almost obsolete each side before the middle. Front scarcely concave, hairy. Body beneath black, abdomen shining, feebly reticulate with punctures.

2. *A. foveicollis*, lata, depressa, atra, ænescens, thorace latitudine duplo brevior, lateribus valde rotundatis, reticulatim punctato, foveis quatuor magnis transversim positis impresso, elytris thorace haud latioribus, confertim fortius granulatis, fortius marginatis, parallelis, postice suboblique attenuatis et rotundatis. Long. .26.

Sacramento valley, Mr. Rathvon. Only differs from *A. expansa* by the thorax having the foveæ deep instead of obsolete, and by the punctures being a little stronger, both on the thorax and elytra: the front is hairy, and concave, but less deeply than in the next species.

3. *A. strigata*, lata depressa nigro-ænea, sæpe cyaneo-variegata, thorace latitudine fere duplo brevior, lateribus rotundatis, angulis posticis subrectis fortius reticulatim punctato, utrinque pone medium oblique impresso, elytris thorace haud latioribus confertim fortius granulatis, fortius marginatis, parallelis postice suboblique attenuatis et rotundatis. Long. .17—.25.

?*Anthaxia æneogaster* Lap. & Gory, Mon. Bupr. 2, 32; tab. 7, fig. 44.

Fort Tejon, California; Mr. Xantus. Front moderately concave, hairy. The sides of the thorax are less rounded than in the two preceding; there are no foveæ, but on each side behind the middle a strong oblique impression running inwards towards the base: the punctures are strongly marked, and there are besides fine elevated lines, having a general longitudinal direction, connected together, forming elongate meshes: the disc is feebly channeled behind the middle. Body beneath greenish, abdomen shining, reticulate with punctures. In some specimens the disc of the thorax is darker than the sides. This is perhaps *A. æneogaster* Lap. & Gory, but the description gives no definite characters by which to separate it from allied species.

4. *A. imperfecta*, latiuscula, depressa, nigro-ænea, thorace latitudine duplo brevior, antrosum angustior, lateribus rotundatis, angulis posticis obtusis, reticulatim punctato, valde quadrifoveato, postice versus medium strigis elevatis haud connexis, elytris granulatis, fortius marginatis, parallelis postice angustatis et rotundatis. Long. .24.

One specimen collected at Santa Fe, New Mexico, by Mr. Fendler. The sides of the thorax are more broadly rounded, especially before the middle, producing thereby the appearance that the thorax is more narrowed in front, than in the preceding species: the sculpture is singular, the ordinary reticulation is not strong, and behind, towards the middle, is broken up into undulating elevated lines having a general transverse direction, and not connected. The front is hairy, scarcely concave.

5. *A. retifer*, latiuscula, depressa, nigro-ænea, thorace latitudine duplo brevior, antrosum angustior, lateribus late rotundatis, angulis posticis obtusis, fortius reticulatim punctato, obsolete quadrifoveato, elytris granulatis, fortius marginatis, parallelis, postice angustatis et rotundatis. Long. .22.

One specimen with the preceding. Differs from *A. imperfecta* by the faint foveæ of the thorax, and by the reticulation being strong and regular over the whole disc. These two differ very much in the same manner as *A. expansa* and *foveicollis*, and

I should be inclined to consider the differences as sexual, but that I have before me a large series of *A. strigata* in which no such variations are seen.

b. *Capite glabro, reticulato.*

6. *A. inornata*, latiuscula, depressa, nigro-ænea, thorace latitudine plus duplo brevior, postice paulo angustato, lateribus rotundatis, postice subsinuatis, et marginatis fortius reticulatim punctato, subgranulato profunde quadrifoveato, elytris dense rugose granulatis, fortius marginatis, parallelis postice angustatis et rotundatis. Long. .23.

*Buprestis inornata* Randall, Bost. Journ. of Nat. His. 2, 4.

One specimen from New York given me by Mr. John Akhurst. This species resembles in appearance *A. foveicollis*, but is broader and smaller, with the thorax densely and strongly reticulated. It also differs from all the preceding species by the head being entirely glabrous, with the punctures more closely placed, and forming a reticulate surface: the central portion of these punctures both of the head and thorax is elevated, so that an appearance is produced intermediate between reticulation and granulation. According to Randall the impressions of the thorax are sometimes obsolete.

*B. Elytra subtiliter rugosa, vix obsolete granulata.*

7. *A. cyanella*, cyanea, vel purpurea, capite fortiter reticulato, thorace latitudine sesqui brevior, antrosum subangustato, lateribus late rotundatis, reticulato, pone medium utrinque transversim oblique profunde impresso, elytris parallelis postice oblique rotundatis, subtiliter rugosis. Long. .17—.21.

Gory, Mon. Buprest. 4, 285; tab. 47, fig. 278.

*Anthaxia scoriacea* Mels. Proc. Acad. Nat. Sc. 2, 148.

Middle, Southern and Western States, rare. Of precisely the same form as the next, and differing only by the colour, and by the surface of the meshes of the net-work covering the thorax being nearly smooth. The oblique impressions of the thorax are formed by the confluence of the two transverse ones; the anterior and interior of which nearly meet at the middle. The front is sometimes green.

8. *A. subænea*, nigro-ænea, opaca, elytris interdum cyanescentibus, capite thoraceque fortiter reticulatis, hoc subtiliter granulato, latitudine sesqui brevior, lateribus late rotundatis, pone medium utrinque oblique impresso, elytris parallelis postice oblique rotundatis, subtiliter rugosis, antennis viridiæneis. Long. .20—.25.

*Anthaxia viridicornis* ‡ Lap. & Gory, Mon. Bupr. 2, 19; tab. 5, fig. 25.

Abundant in the Middle and Western States. Under the specific name quoted, Say has confounded several different insects, but in neither place where he uses it, is reference made to the form here under consideration.

9. *A. viridicornis* cyaneo-nigra, opaca, fronte thoracisque lateribus fulgenti-cupreis, fortiter reticulatis, hoc subtiliter granulato, latitudine sesqui brevior, lateribus rotundatis, utrinque transversim impresso, elytris parallelis postice oblique rotundatis, subtiliter rugosis, antennis nigro-viridibus. Long. .20—.27.

*Buprestis viridicornis* var. Say, Trans. Am. Phil. Soc. 4, 161.

Maryland, Mr. J. Ph. Wild. The sculpture is precisely that of the preceding, but the thorax is a little wider, and the impressions, (formed as usual of two on each side,) do not reach the base or posterior angles, but run to the sides; the posterior angles are also more obtuse. The head is bright coppery, with the occiput and sometimes a small frontal spot black.

The type *B. viridicornis* Say, (Journ. Acad. Nat. Sc. 3, 163,) inhabits Missouri, and is described as having the head and thorax bright coppery, and the antennæ green; body beneath brassy. It is probably a variety of the one here described. Of my specimens two are entirely blue black beneath, while the third is brassy; the elytra of the last mentioned specimen are black bronzed.

10. *A. viridifrons*, fusco-ænea, opaca, capite læte viridiæneo, fortiter reticulato, thorace latitudine plus sesqui brevior, lateribus late rotundatis sæpe viridibus, reticulato, utrinque transversim impresso, elytris a basi vix angustatis postice oblique rotundatis, subtiliter rugosis. Long. .18—20.

Gory, Mon. Buprest, 4, 284; tab. 47, fig. 277.

Middle and Western States. At first view resembles *A. subænea*, but on comparison, the thorax is found less rounded on the sides, the basal angles more rectangular, and the head more deeply punctured. The elytra are also slightly narrowed from the base, thus forming a transition to the following species.

11. *A. quercata*, opaca, capite fusco, macula annulari conchoidea viridiænea, fortiter reticulato, thorace latitudine sesqui brevior, postice subangustato, lateribus late rotundatis olivaceis, reticulato, utrinque pone medium transversim impresso, vitta dorsali latissima fusca, elytris fere parallelis, postice oblique rotundatis, subtiliter rugosis, olivaceis, margine vittaque obliqua integra suturam ad medium attingente fuscis; subtus viridi-nigra, abdominis margine laterali viridiaureo. Long. .16—23.

Variat tota viridi-nigra, abdominis lateribus solis viridiæneis.

Lap. & Gory, Mon. Buprest. 2, 21; tab. 5, fig. 28.

*Buprestis quercata* Fabr. Syst. El. 2, 216.

*Buprestis viridicornis* ‡ var. Say, Trans. Am. Phil. Soc. 4, 161.

Middle and Southern States, abundant. Varies in colour and size, but appears to be always a little broader than the next species, with the sides of the thorax a little more rounded and the elytra less distinctly narrowed from the base.

12. *A. cuneiformis*, opaca, capite viridiæneo, fortiter reticulato, thorace latitudine sesqui brevior, postice subangustato, lateribus antice paulo rotundatis viridibus, vitta dorsali fusca sæpe obsoleta, reticulato, postice utrinque transversim impresso, elytris a basi sensim angustatis, apice oblique rotundatis, viridibus margine et sutura pone medium fusciscentibus, subtiliter rugosis; subtus viridi-nigra, abdominis margine laterali parapleurisque viridiæneis. Long. .15—23.

Gory, Mon. Buprest. 4, 290; tab. 48, fig. 284.

Southern and Western States. I am very doubtful whether this should be regarded as



more than a race of the preceding species, from which it differs only by the characters above noted, and by the head being entirely brassy green, and perhaps a little more deeply reticulated.

13. *A. flavimana*, linearis nigra, opaca, subcyanescens, capite thoracisque lateribus sæpe viridibus, illo fortius, hoc modice reticulato, latitudine parum brevior, postice angustato, lateribus antice parum angustatis, disco bifoveato, ante basin utrinque transversim impresso, basi medio foveato, elytris a basi angustatis, apice rotundatis, subtiliter rugosis, vage punctatis substriatis, interstitio discoideo magis elevato; subtus obscure viridis, tarsi anticis flavis vel piceis. Lon. 14—18.

Gory, Mon. Buprest. 4, 291; tab. 49, 285.

*Anthaxia gracilis* Mels. Proc. Acad. Nat. Sc. Phil. 2, 148.

Southern States. Varies somewhat in colour: some of the specimens are of a fuscous black above, with the head, sides of the thorax, and suture of the elytra dark green; in these the tarsi are piceous. In others, the head and sides of the thorax are of a moderately bright green, the disc of the thorax fuscous, and the elytra very dark blackish blue, the under surface is green, and the anterior tarsi yellow. These are the two extremes, but intermediate forms occur, all agreeing in the vaguely punctured and feebly striate elytra.

14. *A. bivittata* "supra viridi-obscura, elongata; thorace elytrisq. vittis duabus purpureis, corpore infra viridi." Long. 16.

Gory, Mon. Buprest. 4, 292; tab. 49, 286.

Unknown to me. Seems closely to resemble the preceding in form, but the elytra are described as being sculptured in a squamiform manner.

#### GROUP IV.

We have the regular progression of forms here interrupted by a number of genera which are distinguished by the prosternum being very broad and obtuse, fitting into the emarginate mesosternum, which is frequently entirely connate with the metasternum; sometimes, as in a few species of *Acmæodera*, the mesosternum is divided, but in such case the form of the prosternum readily distinguishes this from the two preceding groups.

The suture between the first and segments of the abdomen, is distinct in *Polycesta*, obsolete in the other genera. The mentum is entirely corneous. The ungues are usually simple, but in *Acmæodera* and *Ptosima* they are appendiculate. Our genera may be grouped:

A. Unguiculi simplices, (scutellum distinctum.)						
Tarsi postici articulo 1mo haud elongato	-	-	-	-	-	<i>Thrinopyge</i> .
Tarsi postici articulo 1mo longiore.						
Mandibulæ obtusæ	-	-	-	-	-	<i>Chrysophana</i> .
Mandibulæ acutæ	-	-	-	-	-	<i>Polycesta</i> .

## B. Unguiculi appendiculati.

Parapleuræ obtectæ (scutellum distinctum.)	-	-	-	-	-	P t o s i m a.
Parapleuræ detectæ (scutellum nullum.)	-	-	-	-	-	A c m æ o d e r a.

## THRINCOPYGE Lec.

Antennæ distantes, in foveis minutis insertæ, articulo 1mo longiore sed haud crassiore, 2—4 obconicis, 5—6 triangularibus, 7—11 subtrapezoides: fossulis poriferis infernis, inconspicuis. Labrum transversum; epistoma late emarginatum. Mandibulæ truncatæ, valde obtusæ. Palpi breves filiformes. Mentum breve, corneum, trapezoideum. Scutellum parvum triangulare. Prosternum latum lateribus haud angulatis, apice valde obtusum; mesosternum emarginatum, haud divisum, metasterno arcte conuatum, sutura tamen distincta. Pedes breves, tarsi valde dilatati subtus lobati, articulo ultimo plano, unguiculis distantibus integris, 1mo posticorum paulo longiore. Abdomen sexus utriusque articulo 5to postice sulco profunde circumducto.

A curious genus containing New Mexican species. The body is flat above, narrow and subparallel, the thorax narrower at the base, rounded on the sides, base bisinuate and margined. Elytra with acute humeral angles, parallel on the sides, then narrowed to the apex which is truncate and finely serrate. Anal plate in male formed of two segments, the last slightly emarginate; in the female flat and broadly rounded.

1. *T. alacris*, late viridi vel cyaneo-ænea, nitida, capite grosse thorace parcius punctato, lateribus flavo marginatis, elytris punctato-striatis, interstitiis parce punctulatis, maculis utrinque tribus plus minusve deficientibus, apice truncato subtiliter serrato. Long. .65—8. Tab. XII., fig. 2.

Lec. Journ. Acad. Nat. Sc. 2nd ser. 4, 17.

Arizona and New Mexico. Varies in the size of the spots of the elytra, which become smaller, interrupted, and finally disappear entirely. The lateral yellow margin of the thorax also disappears, leaving only a spot behind the middle. In one specimen the anterior margin is also yellow and interrupted into spots. A yellow spot on the posterior coxæ is usually seen, but fails in many specimens; so, too, with a yellow dot at the anterior extremities of the anal sulcus.

2. *T. ambiens*, viridi-ænea, capite dense punctato, fronte rugosa, thorace punctato, margine laterali flavo, elytris striatis, striis punctatis, interstitiis uniseriatim punctatis, margine laterali flavo, pone humeros et ad medium paulo latiore. Long. .68.

*Buprestis ambiens* Lec. Proc. Acad. 7, 83.

One specimen, Frontera, Rio Grande, Mr. Clarke. Of a brighter green than the preceding, though much less shining.

## CHRYSOPHANA Lec.

Antennæ distantes, in foveis parvis insertæ, tenues, articulo 1mo obconico, et 2ndo paulo crassioribus, hoc duplo brevior, 3io angusto 1mo æquali, 4—10 triangularibus, parce pilosis, sensim vix brevioribus, ultimo ovali, (fossulis poriferis haud obviis.) Labrum integrum, epistoma late emarginatum. Mandibulæ subacutæ; palpi fili-

formes; mentum trapezoideum corneum. Scutellum minutum rotundatum. Prosternum breve latum, postice obtuse rotundatum; mesosternum planum emarginatum haud divisum, cum metasterno apice truncato, haud connatum. Abdomen articulis duobus primis connatis, sutura vix distincta. Tarsi articulis 3 et 4 lobatis, antici dilatati, postici articulo 1mo elongato, ultimo angusto, unguiculis simplicibus.

A small species having very nearly the colour, form and sculpture of *Ancylochira decorata*. The body is elongate, narrowed at each end, and convex. The thorax broadly rounded on the sides, truncate in front, nearly so behind. Elytra rounded behind, not serrate.

1. *C. placida*, viridi-ænea, undique dense punctata, thorace medio cupreo-micante, elytris striis parum impressis, vittaque discoidali cuprea ornatis. Long. .3.

One specimen collected in Oregon by Dr. J. K. Townsend, was given me by Mr. Willcox, as *Phænops placida* of the Berlin Museum. It is, however, not at all related to that genus either in appearance or character.

#### POLYCESTA Sol.

1. *P. elata* Lec. Proc. Acad. 1858, 68.

Texas, Mr. H. Haldeman.

2. *P. cavata*, nigra subænea, fronte concava, thorace tri-excavato medio subcarinato, elytris valde costatis, rude clathratis, interstitiis (costis exceptis) suturaque pæse punctatis. Long. .7.

Lec. Proc. Acad. Nat. Sc. 1858, 68.

Alabama, given me by Prof. Haldeman. Black, slightly bronzed. Head very coarsely punctured, front deeply concave. Thorax three times as wide as long, angulated on the sides at the middle, where it is broadest, rapidly narrowed to the apex, and slightly to the base: covered with very large punctures, unequally distributed, leaving the spaces between the three large excavations very sparsely punctured; there is besides a small callus at the apex near each angle: the middle excavation is subcarinate. Elytra strongly costate, the intervals between the costæ with two series of very large quadrate punctures, the interstices sparsely punctured, sutural costa with a series of punctures: second and third costæ smooth; they are parallel on the sides for two thirds their length, then obliquely narrowed, and irregularly serrate to the apex, which is slightly rounded.

3. *P. californica*, nigra, subænea, fronte parum concava, thorace tri-excavato, elytris valde costatis, modice clathratis, interstitiis (costis exceptis) dense punctatis. Long. .75.

Lec. Pacific R. R. Expl. & Surveys, Ins. 47th Par. 45: Proc. Acad. 1858, 68.

Sacramento, California, collected by Mr. Wittick and given me by Mr. S. S. Rathvon.

4. *P. obtusa*, nigra subænea, fronte plana, thorace planiusculo, medio postice foveato, elytris postice obtuse rotundatis, seriatim variolatis, interstitiis pæce punctulatis, 3io antice latiore. Long. .48.

Lec. Proc. Acad. Nat. Sc. 1858, 68.

A specimen found in Philadelphia, was kindly given me by Mr. George Newman. Smaller than the others. Head coarsely punctured, front not concave; thorax more than twice as wide as long, strongly angulated on the sides, narrowed to the base, but more narrowed to the apex; coarsely and equally punctured, disc flattened towards the middle, with a large oblong fovea at the middle of the base. Elytra parallel on the sides, obtusely rounded and serrate at the tip; striate with rows of square punctures, the interstices finely sparsely punctured, the 3d growing gradually wider and more elevated towards the base. The subsutural row of punctures forks near the base, leaving a short interval.

5. *P. velasco*, nigro-ænea, fronte plana, thorace planiusculo, postice subfoveato, et subtiliter canaliculato, disco antice utrinque late impresso, clytris seriatim grosse punctatis, interstitiis parce punctatis, alternatim elatioribus. Long. .77.

Laporte & Gory, Mon. Buprest, 2, 6, tab. 1, fig. 7.

A Mexican species, but found by Mr. Arthur Schott on the Rio Grande in Texas. Body black bronzed. Head coarsely punctured, front flat, with a slight medial elevated line. Thorax nearly three times as wide as long, obtusely rounded on the sides at the middle, narrowed to the base, but more so to the apex, coarsely punctured, densely at the sides, not densely at the middle, slightly broadly impressed at the middle of the base, and with two faint rounded impressions before the middle: a fine impressed dorsal line extends from the middle to the base. Elytra slightly narrowed from the base to three-fourths of the length, then obliquely narrowed to the apex, which is rounded; with striae of large punctures, the interstices finely punctured, alternately a little more elevated, sutural costa bifurcated a little before the middle, thus forming a long and broad scutellar costa.

#### PTOSIMA, Sol.

1. *P. luctuosa* Gory Mon. Buprest. 4, 71, tab. 13, f. 69.

*Buprestis gibbicollis* || Say, Journ. Acad. Nat. Sc. Phil. 3, 161.

Alabama, Ohio, Missouri: Say stated (Trans. Am. Phil. Soc. 6, 158) that the name given by him was preoccupied for a European species, and ought to be changed, but neglected to propose another. I am, therefore, under the necessity of adopting the more recent name of Gory. Erichson, by a singular error, mentions this species (Bericht, &c., 1840, 19) as belonging to *Acmaëodera*.

#### ACMÆODERA Esch.

Though but few species of this genus are found within the old limits of the United States, the extension of our territory towards the South and West, has introduced into our fauna a considerable number, of which several extend into Mexico, and were previously described from that country; probably others of the species described by me, may

be found identical with Mexican species, but, if so, I can only plead the insufficiency of previous descriptions, or the inaccuracy of figures, as an excuse for any synonyms I may make.

Our species may be conveniently arranged as follows.

I. *Abdomen segmento ventrali ultimo cristula transversa munito et sulco circumducto.*

A. Cuneiformes, thorace ante basin latiore, lateribus valde rotundatis, medio late excavato, ad latera oblique impresso, elytris striatis; corpus subtus parum pubescens - - - - - Sp. 1-6.

B. Cuneiformis, elongata, thorace lateribus postice subrectis parallelis, elytris costatis; corpus subtus longe pilosum - - - - - Sp. 7.

C. Fusiformis, thorace lateribus obliquis, subrectis, elytris striatis, humeris valde prolongatis, lateribus fortius sinuatis; corpus subtus longe pilosum - - - - - Sp. 8.

D. Vix cuneiformes, sæpe cylindrici, thorace lateribus late rotundatis, angulis posticis subrectis, elytris striatis; corpus subtus parum pubescens. - - - - - Sp. 9-13.

II. *Abdomen segmento ventrali ultimo simplici.*

E. Subcylindricæ, elytris striatis; corpus subtus parum pubescens. - - - - - Sp. 14-15.

F. Cylindrica, elytris striatis; corpus subtus longe pilosum. - - - - - Sp. 16.

A.

1. *A. flavomarginata*, cuneiformis, supra æneo-nigra, pilis nigris erectis pilosa, fronte concava, thorace latitudine plus duplo brevior, lateribus valde rotundatis fortius marginatis ante basin latiore, fortiter punctato, medio triangulariter late et profunde excavato, utrinque oblique impresso, vitta marginali flava ornato; elytris punctis magnis seriatis fortiter impressis, interstitiis angustis uniseriatim punctulatis, a basi sensim angustatis, margine incrassato, dorso deplanatis, postice valde serratis singulatim rotundatis, vitta marginali postice abbreviata flava, fasciaque miniata antea picali, guttam communem suturalem alteramque lateralem nigras includente; subtus nigro-ænea, parce cinereo-pubescens. Long. .43.

Gory in Griffith's An. Kingdom, 1, 358, pl. 31, fig. 2; Chevr. Col. Mex. cent. Ima. Lap. & Gory, Mon. Buprest. 1, 2, tab. 1, fig. 2.

Eagle Pass, Rio Grande, Texas, Mr. A. Schott; abundant in Mexico. A very small yellow sutural spot near the apex of the elytra is visible in one specimen; in another, the lateral yellow stripe includes a marginal black dot near its termination. The red tint of the posterior band is sometimes wanting. The striae at the sides and tip are very deep, so that the intervals become convex. The 3d and 5th intervals are slightly elevated at the base. The last ventral segment has a broad shallow marginal groove, with a faint transverse carina near the apex.

2. *A. opacula*, cuneiformis, æneo-nigra, hirta, fronte vix impressa, thorace latitudine plus duplo brevior, lateribus obliquis rotundatis, fortiter marginatis, ante basin latiore, rude punctato, minus dense in medio, triangulariter late excavato, versus latera late foveato, lateribus flavis, margine summo nigro-æneo, elytris thorace angustioribus, a basi angustatis, postice magis attenuatis fortiter serratis singulatim subrotundatis, punctis quadratis seriatis, striis externis et ad apicem profundis, interstitiis angustis uniseriatim punctulatis, maculis pluribus saturate flavis, posticis rufo-tinctis; subtus parce pubescens. Long. .42. Tab. XII. fig. 3.

Le Conte, Proc. Acad. Nat. Sc. Phila., 1858, 69.

One specimen, El Paso, Rio Grande, Mr. Clark. Differs from all the following species of this division by the more strongly margined sides of the thorax. The spaces between the rows of punctures of the elytra are unusually narrow; the spots are a marginal elongate one near the humerus, another larger marginal about the middle, which includes a black spot; a basal dot on the 3d interval, two spots before the middle extending from the second and the fifth stria; then two smaller ones, the position of which is nearer the suture; finally, two transverse oblique one, reaching the margin, and a subapical dot. The last ventral segment has barely a trace of the subapical carina, but the marginal groove is deep.

3. *A. hæmorrhœa*, cuneiformis, elongata, nigro-ænea, pilis nigris erectis hispida, fronte concava, cinereo-pilosa, thorace latitudine plus duplo brevior, lateribus rotundatis, ante basin paulo latiore, fortiter punctato, medio triangulariter valde excavato, et canaliculato utrinque oblique profunde excavato, gutta marginali flava ornato; elytris punctis magnis seriatis, striis externis et ad apicem impressis, interstitiis uniseriatim punctulatis, a basi sensim angustatis, dorso deplanatis, postice valde serratis, conjunctim rotundatis, violaceo-nigris maculis parvis confluentibus flavis variegatis, margine apicali late minio; subtus nigro-ænea parce cinereo-pubescent. Long. 40—45. Tab. XII., fig. 4.

Le Conte, Proc. Acad. Nat. Sc. Phila., 1858, 69.

Texas and Northern Mexico, Mr. Schott. This species has nearly the same outline as the preceding; the elytra of the female are less regularly attenuated, and are more rounded on the sides. The last ventral segment has a transverse prominent carina, or rather a short plate near the apex, and shallow marginal groove.

There is nothing in either the figure or description of *A. stellaris* as given by Gory, Mon. Buprest. 4, 28, tab. 5, f. 25, which would forbid the reference of the present species to it, except that the scarlet apical margin of the elytra is not mentioned. This is probably an inconstant character, but the more full descriptions of Chevrolat and Spinola, show that *A. stellaris* is very different from the species now under consideration, and probably belongs to group D.

4. *A. connexa*, cuneiformis, depressa, nigro-ænea, hirta, thorace latitudine triplo brevior, lateribus rotundatis postice subito incurvis, ad basin elytris latiore, rude punctato, medio triangulariter late excavato postice utrinque oblique foveato; elytris punctis quadratis profundis, striis postice et extrorsum magis impressis, interstitiis uniseriatim punctulatis; a basi sensim, postice magis angustatis et fortiter serratis, apice conjunctim rotundatis, maculis pluribus ante medium varie confluentibus, pone medium fasciis duabus flavis ornatis; subtus parce cinereo-pubescent. Long. 35—47.

Le Conte, Proc. Acad. Nat. Sc. Phila. 1859, 72.

Fort Tejon, California: John Xantus, Esq. More depressed than our other species, and readily distinguished by the characters above given. In addition, it may be observed, that the front is not concave, and the last ventral segment is broadly margined as usual.

In the male the apex is truncate, with a submarginal transverse carina; in the female it is rounded, and the carina is less distinct. The spots are very variable; in one specimen the anterior ones are small and not connected with a transverse band-like spot at the middle: in others, there is a vitta from the base to the middle, enclosing several spots, and bending outwards to the margin at its extremity. The posterior bands are oblique, and do not attain the suture; a minute apical yellow dot is frequently seen.

The wings of several specimens project when the elytra are closed, from which I am disposed to think, that this species flies after the manner of *Cetoniæ*, with the elytra not expanded.

5. *A. acuta*, cuneiformis, depressa, nigro-ænea, hirta, thorace latitudine plus duplo brevior, lateribus rotundatis, ante basin vix latiore, grosse punctato medio triangulariter valde excavato, ad latera oblique excavato, elytris thorace haud angustioribus, a basi sensim attenuatis, postice magis oblique attenuatis, et serratis apice conjunctim rotundatis, punctis seriatis impressis, striis externis profundis, interstitiis planis rugulosis, uniseriatim punctulatis, maculis pluribus ante medium confluentibus, alterisque duabus pone medium, prima transversa, secunda longitudinali; subtus parce cinereo-pubescent. Long. .33.

One specimen with the preceding, from Fort Tejon. Resembles the former in markings, but the form is quite different, the thorax being not wider than the elytra, with the sides not inflexed behind; it is more coarsely punctured, and the disc is more excavated: the elytra are attenuated, and therefore more acute behind: the anterior spots have a tendency to become confluent, but the two which represent the posterior bands are different, one being a marginal transverse spot, and the other a subapical longitudinal one: there is, besides, an apical yellow dot, and a minute marginal one. The last ventral segment is rounded, with a small subapical carina.

6. *A. ornata*, subcuneiformis, atra, hirta, fronte parum impressa, thorace latitudine duplo brevior, lateribus rotundatis, ad basin subito incurvis, fortiter punctato in medio postice, et versus latera late et profunde excavato, gutta marginali flava sæpe ornato, elytris cyaneo-nigris, punctis magnis seriatis, striis externis et ad apicem impressis, interstitiis angustis, uniseriatim punctulatis, a basi ad dodrantem subangustatis, dein magis attenuatis et fortiter serratis, apice conjunctim rotundatis, dorso deplanatis maculis parvis pluribus flavis ornatis; subtus cyaneus, nitida, parce cinereo-pubescent. Long. .30—.44.

Laporte et Gory, Mon. Buprest. 1, 6; tab. 2, fig. 7.

*Buprestis ornata* Fabr. Ent. Syst. 1, 2, 200: Syst. El. 2, 199. Herbst, Col. 9, 209, tab. 154, fig. 5: Say, Trans. Am. Phil. Soc. 6, 159.

From Massachusetts to Texas, not rare. For a more full list of references see Laporte & Gory, loc. cit. The front is sometimes slightly impressed, sometimes not at all so: the elytra are a little more rounded on the sides in the female than in the male. The last ventral segment is margined as usual, and the subapical carina is distinct, but more prominent in the male than in the female; the apex is also subtruncate in the former. The spots vary in number, but are always small and irregular.

## B.

7. *A. comata*, cuneiformis, valde elongata, nigra subænea, pilis longis lanuginosis albis parce vestita, fronte late concava, capite thoraceque grosse punctatis, hoc latitudine sesqui brevior, lateribus parallelis antice paulo rotundatis, apice late marginato, medio longitudinaliter haud profunde excavato, ad basin utrinque breviter oblique excavato, elytris a basi sensim, postice autem magis attenuatis et serratis, crenato-striatis, interstitiis alternis elevatis, punctis paucis parvis flavis ornatis; subtus præcipue ad latera longe albo-pubescent. Long. .38. Tab. XII., fig. 5.

Le Conte, Proc. Acad. Nat. Sc. Philad. 1858, 70.

One specimen found on the Colorado river, below the Gila. The punctures of the under surface are less deep at the middle of the anterior segments of the abdomen; the last ventral segment has no subapical carina, but the groove is distinct. The two outer striæ of the elytra are confluent behind the humerus.

## C.

8. *A. gibbula*, nigro-ænea, supra parce albo-pilosa, capite subtilius, thorace sat dense punctato, hoc latitudine baseos duplo brevior, lateribus obliquis parum rotundatis, antrorsum valde angusta, medio triangulariter excavato, basi utrinque profunde foveato; elytris humeris valde callosis, angulo producto, thoracis basin amplexante, punctis quadratis seriatis, striis externis et ad apicem profundis, Ima antice fere oblitterata, interstitiis uniseriatim punctulatis, nigro-cyaneis, maculis pluribus magnis flavis ornatis, posticis rufotinctis; subtus longe dense albo-pubescent, vitta media subglabra. Long. .5. Tab. XII., fig. 6.

Le Conte, Proc. Acad. Nat. Sc. Philad. 1858, 69.

Two specimens found by Dr. T. H. Webb on a journey from El Paso to San Diego. The front is very slightly impressed: the sides of the elytra, from the prolongation of the humeral angles, are deeply sinuate near the base; their outline in the male is somewhat cuneiform, narrowing in a slight curve from the base, they are strongly serrate behind, and the tip is conjointly rounded: in the female they are nearly parallel, and slightly sinuate for three-fourths the length, then obliquely narrowed to the apex. The spots of the disc are seven or eight in number, forming a series on the 3d, 4th and 5th intervals, and are unequal in size: the other spots are, a humeral dot, three marginal spots occupying two intervals, and finally three spots alternate with the marginal ones, on the 3d interval from the side; these last are tinged with scarlet: the two outer striæ are confluent anteriorly. The punctures of the under surface are more sparse, but not smaller at the middle than at the sides: the last ventral segment has a very broad carina and the usual groove.

## D.

9. *A. pulchella*, supra violaceo-ænea, nitida, hirta, thorace latitudine plus duplo brevior, lateribus late rotundatis, ante basin haud latiore, sat dense punctato, ad basin trifoveato, fovea media majore haud profunda, macula parva flava utrinque ad angulum sæpe ornato; elytris striis punctatis postice et extrorsum impressis, interstitiis uniseriatim punctatis, macula magna laterali postice latiore, fasciis duabus posticis flavis, (guttisque pluribus posticis sæpe ornatis,) postice valde serratis, apice conjunctim rotundatis; subtus nigro-ænea, parce punctata, parum pubescens. Long. .28—.40.



Mas subcuneiformis, elytris a basi ad dodrantem subangustatis, dein magis attenuatis: segmento ventrali ultimo postice marginato, linea submarginali paulo elevata.

Femina subcylindrica, elytris a basi haud angustatis, postico subito angustatis, segmento ventrali ultimo postice marginato, linea submarginali brevior magis elevata.

*Buprestis pulchella* Herbst. Col. 9, 211; tab. 154, f. 6. (1801.) Say, Trans. Am. Phil. Soc. 6, 158.

? *Buprestis ornata* ‡ Oliv. Ins. 32, 50, tab. 7, fig. 7. (icon pess. vix spec. Fabr.)

*Acmæodera ornata* Spinola, Ann. Ent. Soc. France, 7, 365.

*Acmæodera volvulus* ‡ Lap. & Gory, Mon. Bupr. 1, 7, tab. 2, f. 8. (nec. Fabr.)

*Acmæodera flavosignata* Gory, Mon. Bupr. 4, 30, tab. 6, f. 28.

? *Acmæodera dispar* Gory, Mon. Bupr. 4, 31, tab. 6, f. 29.

Middle, Southern, and Western States, not rare. Messrs. Laporte and Gory have not only applied to this species the description of Fabricius, which does not at all agree with it, but have repeated in the synonymy references to Olivier, which had been previously cited under *A. ornata*. This species varies greatly in its elytral markings, and sometimes in addition to those mentioned in the diagnosis there is a narrow interrupted sub-sutural yellow vitta. The description of Olivier seems to refer rather to this species, than to the one above described as *A. ornata*, but is still somewhat doubtful.

10. *A. variegata*, nigro-ænea, hirta, sub-cuneiformis, thorace latitudine plus duplo latiore, lateribus late rotundatis, ante basin sublatis, sat dense punctato, ad basin medio late depresso, et foveato, utrinque oblique modice impresso, foveaque profunda notato, macula laterali fulva; elytris striis grosse punctatis, postice et extrorsum impressis, interstitiis uniseriatim punctatis, maculis basalibus humerum ambientibus, fasciisque transversis margine confluentibus ad suturam interruptis fulvis, postice valde serratis, apice conjunctim rotundatis; subtus fortiter punctata, parce pubescens. Long. .30—.35.

Lec. Proc. Acad. Nat. Sc. Phila. 6, 67, (in part.)

Sante Fe, New Mexico, Mr. Fendler; Texas, Mr. Haldeman. Liable to be confounded with some of the varieties of the next species, but on comparison the thorax is more depressed at the middle of the base, and the lateral foveæ are larger and accompanied with faint oblique impressions; the sides of the thorax are much more rounded, less declivous, and the posterior angles are almost obtuse: the elytra are also more flattened towards the base, whereby the humeral bullæ become more protuberant, the sides converge very slightly from the base, and are obliquely narrowed for the posterior fourth: on this account the shape becomes slightly cuneiform. The markings of the elytra are reddish yellow; confluent spots surround the humerus; a broad band, more or less irregular at the middle, another at about three-fifths the length, and a fourth half way between the last and tip, extending along the margin to the tip; these bands are in some specimens connected along the margin, where they include a few small black spots; the two external striae unite and are abbreviated behind the humerus.

The last segment of the abdomen, as usual is margined, with a small transverse sub-apical crest, alike in the three specimens before me.

11. *A. mixta*, subcylindrica (mas vix cuneiformis, femina fere obesa) obscure ænea, hirta, thorace latitudine duplo brevior, lateribus antice oblique rotundatis, postice parallelis, sat dense punctato, basi medio minus late foveato, punctoque utrinque versus latera impresso, macula laterali fulva; elytris striis punctatis, postice et extrorsum impressis, interstitiis uniseriatim punctatis; fasciis præcipue anticis plus minus confluentibus, guttis parvis nigris sæpe solis relictis, postice serratis, conjunctim rotundatis; subtus fortiter punctata, parce pubescens. Long. 30—50.

Mas, elytris postice magis oblique attenuatis, abdominis segmento ventrali ultimo carinula subapicali transversa longiore.

Femina, elytris postice magis rotundatim attenuatis, abdominis segmento ventrali ultimo carinula transversa brevi. *Acmæodera variegata* Lec. Proc. Acad. Nat. Sc. Phila. 6, 67, (in part.)

Texas, New Mexico, Kansas; Mr. Lindheimer, Capt. Pope, Mr. Xantus. The differences between this and the preceding have been already pointed out: it only remains to add, that the markings of the elytra vary very much: normally they consist of four bands and an apical dot, the first surrounds the humeral bulla; these bands then become confluent on the margin, enclosing a few black marginal spots, and the first and second coalesce on the disc, including a large irregular spot: finally all the bands become confluent, so that the elytra are reddish yellow, with the suture green bronzed, the humeral bullæ, and some small dots especially behind the middle alone remaining black.

12. *A. semivittata*, subcuneiformis, minus elongata, æneo-nigra, nitida, hirta, fronte sulcata, thorace latitudine fere triplo brevior, antrorsum sensim angustato, lateribus oblique rotundatis flavo-marginatis, punctato, basi medio late triangulariter excavato, versus latera oblique profunde impresso, elytris vitta marginali alteraque utrinque discoidali, lineisque reticulatis posticis flavis, spatiis relictis violaceo-nigris, striis punctatis postice et extrorsum impressis, interstitiis uniseriatim punctulatis; a humeris vix attenuatis, postice autem oblique angustatis, serratis apice conjunctim rotundatis; subtus punctata, densius ad latera, paulo pubescens. Long. 34—45.

Lec. Proc. Acad. Nat. Sc. Phila. 1858, 69.

Eagle Pass, Texas, collected by Mr. A. Schott. Varies in the breadth but not in the general arrangement of the elytral markings. No sexual difference is obvious except that the females are stouter and more cylindrical than the males; the last ventral segment has the usual short transverse subapical crest.

13. *A. retifera*, subcylindrica, nigro-ænea, longius hirta, thorace latitudine triplo brevior, punctato, antice angustato, lateribus rotundatis, medio late canaliculato, versus angulos oblique profunde impresso, elytris maculis flavis varie connexis, vittam reticulatam fere ad apicem extensam utrinque formantibus, guttaque apicali parva ornatis, striis punctatis, extrorsum et postice impressis, interstitiis uniseriatim punctulatis, postice oblique rotundatis, serratis; subtus punctata, subtilius ad abdominis medium, parce pubescens. Long. 34.

Lec. Proc. Acad. Nat. Sc. Phila. 1859, 72.

Fort Tejon, California, one specimen, Mr. Xantus. The margin is yellow, interrupted by black spots, and more or less connected with the discoidal vitta. Last ventral segment as usual.

## E.

14. *A. texana*, subcylindrica, obscura vix ænea, hirta, thorace latitudine duplo brevior, densius punctato, lateribus magis rotundatis, medio subcanaliculato, et ad basin impresso versus angulos foveato, elytris striis punctatis, interstitiis planis, uniseriatim punctulatis, elytris maculis pluribus parvis pallide flavis ornatis, apice oblique rotundatis serratis; subtus punctata, parcius in medio, parum pubescens. Long. .25.

One specimen, Texas; Horace Haldeman, Esq. Closely related to the two following in general appearance, but differs by the hair being as long on the elytra as on the thorax: the latter is densely punctured as in the next species, but is less narrowed in front, and less rounded on the sides. The spots are small and irregular, three have a tendency to encircle the humerus, then a transverse one scarcely touching the margin, directed obliquely forwards, then three transverse ones, and a subapical dot. These spots will probably be found to vary in other specimens.

The last segment of the abdomen has no vestige of the subapical crest and groove seen in all the previous species.

15. *A. tubulus*, subcylindrica, obscura vix ænea, capite thoraceque longius, elytris breviter pubescentibus, thorace convexo, antrosum angustato, fortiter punctato, lateribus magis rotundatis, ante basin latiore, puncto utrinque basali notato, elytris striis punctatis, interstitiis uniseriatim punctulatis, guttis pluribus parvis flavis ornatis, postice oblique rotundatis serratis; subtus æqualiter sat punctata, parum pubescens. Long. .22—.33.

\* ? Laporte & Gory, Mon. Buprest. 1, 11, tab. 3, fig. 15: Spinola, Ann. Ent. Soc. France, 7, 383.

*Buprestis tubulus* Fabr. Syst. El. 2, 200: Say, Trans. Am. Phil. Soc., 5, 200.

*Buprestis culta* Weber, Obs. Ent. 75.

*Buprestis geranii* Harris, New England Farmer, 1829, 8.

α. Variat; maculis elytrorum plus minusve deficientibus, vel etiam immaculatis.

β. Variat? thorace densius punctato, dorso canaliculato, maculis elytrorum anterioribus plus minus confluentibus, (Texas.)

Throughout the Atlantic region of the United States: the immaculate variety was given me by Mr. E. T. Cresson.

Two specimens from Texas, collected by Mr. Haldeman, agree in having the thorax distinctly channeled, and less coarsely but more densely punctured than in the more northern specimens; in one of them the spots are placed as usual, but in the other the anterior ones have become confluent so as to form a narrow irregular vitta from the base to the middle, where it reaches a spot connected with the margin. Should the difference in the sculpture of the thorax prove constant, it must be separated as a distinct species.

I have queried the reference to Laporte, because he gives the locality, Columbia, and states that the thorax is channeled.

F.

16. *A. guttifer*, subcylindrica, æneo-nigra nitida, parce longè albo-pilosa, thorace latitudine duplo brevior, convexo, lateribus rotundatis, apice fortius transversim impresso, basi medio profunde late foveato, fortiter punctato, elytris cyanescentibus, basi thorace paulo latoribus, postice obtusius rotundatis serratis, striis fortiter punctatis, postice et extrorsum impressis, externis duabus antice confluentibus haud abbreviatis, interstitiis subtiliter uniseriatim punctulatis, guttis flavis ornatis, 3 discoidalibus, 5 submarginalibus; subtus nigro-ænea, longe pilosa, punctata, abdominis articulis 3 ultimis confertissime subtiliter punctulatis. Long. .28.

Lec. Proc. Acad. Nat. Sc. Phila. 1859, 72.

One specimen, Fort Tejon, California, Mr. Xantus.

GROUP V.

A very distinct group, recurring to the normal series, and readily distinguished by the antennæ being situated in round cavities: the epistoma is frequently emarginate in front and strongly narrowed behind: the mentum is corneous at base, membranous at apex. The prosternum is broad, strongly acuminate at tip, and also on each side; the mesosternum is large, and completely divided. The scutellum is elongate and acuminate; each elytron is rounded or subangulated at base, entering the base of the thorax, which thus becomes lobed: the membranous lobes of the basal joints of the tarsi are obsolete. But two genera are found within our territory, which differ by very many characters detailed by Lacordaire. The most obvious are, however, those derived from the tarsi.

Tarsi articulo 3io apice truncato, postici articulo 1mo reliquis æquali *Chrysobothris*.

Tarsi articulo 3io apice utrinque valde prolongato, postici articulo 1mo 2ndo haud longiore *Actenodes*.

CHRYSOBOTHRIS Esch.

A numerous genus, containing species which sometimes resemble each other very closely, and which from neglect of certain characters of value derived from the abdomen and tibiæ have been so described as to cause some confusion.

For the most convenient separation of the species into smaller groups, the following table may be used.

- A. Abdomen segmento ventrali ultimo margine serrulato; (elytris costatis.)
- a. Thorax æqualis; elytra foveis discretis impressa - - - - - Sp. 1—2.
  - b. Thorax inæqualis; elytra foveis confluentibus, vel vix discretis;
    - α. Tibiæ anteriores ♂ intus serratæ, abdomen ♀ apice truncatum, præcipue subtridentatum. - - - - - Sp. 3—8.
    - β. Tibiæ anticæ ♂ apice dilatatæ, vel versus apicem dente armatæ; abdomen ♀ apice subincisum - - - - - Sp. 9—18.

## B. Abdomen segmento ventrali ultimo margine haud serrulato.

- c. Elytra costata, impressa, apice acuminata - - - - - Sp. 19.
- d. Elytra subcostata, plus minus foveata, apice rotundata; thorax inæqualis.
- $\alpha$ . Elytra foveis discoidalibus utrinque tribus inauratis - - - - - Sp. 20.
- $\beta$ . Elytra foveis discoidalibus utrinque duabus - - - - - Sp. 21.
- e. Elytra plus minus foveata, apice rotundata; thorax lateribus haud inæqualis.
- $\alpha$ . Abdomen segmento ventrali ultimo linea submarginali fortiter serrata - - - - - Sp. 22.
- $\beta$ . Abdomen segmento ventrali ultimo linea nulla elevata - - - - - Sp. 23—27.
- f. Elytra basi sola foveata, fasciis atris ornata; thorax antrorsum angustatus, lateribus convexis Sp. 28—29.

## A—a.

1. *C. octocola*, elongata, depressa, supra obscura, æneo-micans, punctata, thorace lateribus late rotundatis, antice sublatiore, elytris costis solitis tenuibus, fovea basali impressionibusque utrinque tribus inauratis, 2nda postice emarginata, postice serratis, apice singulatim rotundatis; subtus cupreo-ænea punctata, prosterno medio lævi. Long. 44—67.

Mas capite viridiæneo, pygidio haud carinato, segmento ventrali ultimo valde emarginato, tibiis anticis et intermediis curvatis, denticulis paucis internis armatis.

Femina capite æneo, pygidio carinato, segmento ventrali ultimo sinuatim truncato, dentibus externis acutis, medio parum prominulo, disco carinato: tibiis anticis paulo curvatis, intermediis fere rectis.

Lee. Proc. Acad. Nat. Sc. Phila. 1858, 67.

Texas, Arizona, and Colorado river of California: lives in species of *Prosopis*. The last ventral segment is provided with a submarginal elevated serrate line, and a smooth anterior triangular spot each side, which projects into an acute tooth: the segments of the abdomen are each furnished with a smooth lateral spot, and their posterior angles project strongly. The tooth of the anterior femora is serrate externally, but scarcely so internally: the third joint of the antennæ is more than twice as long as its width.

2. *C. basalis*, magis elongata, depressa, supra obscura, æneo-micans, punctata, thorace lateribus rectis, antice angulatis et obliquis, linea tenui dorsali, alteraque utrinque brevi basali lævibus, elytris costis solitis tenuibus, fovea basali, alterisque utrinque tribus subauratis, postice serratis, apice singulatim rotundatis; subtus cupreo-ænea, punctata, prosterno medio lævi. Long. 7.

Mas capite viridi, pygidio haud carinato, segmento ventrali ultimo valde emarginato, tibiis anticis ultra medium, intermediis ad medium intus denticulatus, valde curvatis, antennarum articulis 3—7 dilatatis.

Femina capite æneo, vix virescente, pygidio carinato, segmento ventrali ultimo sinuatim truncato medio carinato, tibiis anticis valde curvatis, intermediis fere rectis.

Lee. Proc. Acad. Nat. Sc. Philad. 1858, 68.

?*Chrysobothris Atabalipa* Laporte & Gory, 2, 43, tab. 8, fig. 60.

Two specimens from Texas, collected by Mr. Schott. Resembles in appearance the preceding, but is more elongate, with smaller and less brilliant elytral impressions. Besides the characters mentioned above the femoral tooth is strongly serrate on its whole

margin. The figure of *C. A t a b a l i p a* resembles this species, but the description, like all others of the first portion of the work quoted, makes no mention of any distinguishing characters. I will, therefore, leave the question of synonymy to be determined by any person into whose hands the original type may have fallen.

A—b,  $\alpha$ .

3. *C. e x e s a*, latiuscula, obscure ænea, dense punctata, thorace lateribus rectis, apice subito inflexis, antice paulo latiore, inæquali, spatiis elevatis lævibus, elytris costa 1ma integra, reliquis omnino interruptis, transversim confluentibus, (ita ut fasciæ tres irregulares sublævæ efformantur, tresque opacæ depressæ punctatæ, 1ma basalis, alteræ sinuatæ apparent,) serratis singulatim rotundatis; subtus cupreo-ænea, prosterno sat dense abdomine rude punctato, segmento ventrali ultimo spatio laterali lævi postice elevato instructo. Long. .36—.42.

Mas latet. Femina segmento ventrali ultimo medio lævi subcarinato, apice late truncato, et subemarginato.

Lec. Proc. Acad. Nat. Sc. Phila. 1858, 68.

Arizona and Colorado River of California. The segments of the abdomen have smooth prominent lateral triangular spaces, which project behind. The tooth of that of the last segment is very obvious, as in *C. o c t o c o l a*.

4. *C. f e m o r a t a*, depressa præcipue minus elongata, obscura ænescens, punctata, thorace antice paulo latiore, plus minusve canaliculato, elytris costis solitis interruptis, impressionibus utrinque duabus fasciformibus, anteriore flexa, posteriore sinuata, lateribus serratis, apice singulatim rotundatis, subtus cupreo-ænea, prosterno præcipue linea lævi notato. Long. .32—.63.

*Buprestis femorata* Fabr. Syst. El. 2, 208.

Mas capite sæpe viridi, pygidio haud carinato, segmento ventrali ultimo emarginato, tibiis anticis et intermediis curvatis, intus plus minusve serrulatis.

Femina pygidio carinato, segmento ventrali ultimo linea lævi antica basi latiore notato, apice sinuatim truncato, fere tridentato; tibiis intermediis fere rectis, anticis paulo curvatis.

Gens  $\alpha$ . Major, latior, maculis elytrorum fasciformibus distinctis; mas capite haud virescente, tibiis anticis denticulis 2 vel 3 prominulis.

*Chrysobothris Alabamæ* Gory, Mon. Buprest. 4, 185, tab. 32, f. 183.

Gens  $\beta$ . Media, maculis elytrorum distinctis.

$\alpha$ . Mas capite æneo-obsuro, tibiis anticis dentibus 4—6 prominulis.

$\beta$ . Mas capite viridi, tibiis anticis intus serrulatis.

*Buprestis femorata* Fabr. l. cit.; Oliv. Ins. 32, 47, tab. 4, f. 121; Herbst, Käfer, 9, 226, tab. 152, f. 4; Harris, New Engl. Farmer, 8, 2; Ins. Inj. to Veg. 44.

*Chrysobothris quadriimpressa* Laporte & Gory, Mon. Bupr. 2, 48, tab. 8, f. 64.

*Chrysobothris dentipes* ‡ Laporte & Gory, Mon. Bupr. 2, 52, tab. 9, f. 70.

*Chrysobothris viridiceps* Mels. Proc. Acad. Nat. Sc. Philad. 2, 147.

*Chrysobothris rugosiceps* Mels. ibid.

Gens  $\gamma$ . Minor, præcipue latior, maculis elytrorum distinctis, mas tibiis anticis intus serrulatis.

From Canada to Texas and the Rocky Mountains; race  $\beta$ — $b$  is also found in Oregon and California. As is usual with species distributed over such a wide extent of country,

this exhibits the phenomenon of subspecies or *rases*, which, however, should not be distinguished by different names, since frequent transitions may be found between them, and the characters which separate them are not similar to those which distinguish well defined species.

The ventral segments in this species have smooth triangular lateral spots, and their angles project; on the last segment this spot is somewhat elevated behind, but not dentiform as in *C. octocola* and *basalis*.

5. *C. soror*, depressa, obscura, ænescens, punctata, thorace subinæquali antice paulo latiore, vix obsolete canaliculato, punctis transversim confluentibus ruguloso, elytris costis solitis interruptis, impressione anteriore transversa quadrata, posteriore fasciformi sinuata, serratis, apice singulatim rotundatis; subtus cupreo-ænea, prosterno dense punctato. Long. 40—45.

Mas fronte viridi, corpore subtus viridi-tincto, pygidio haud carinato, abdominis segmento ventrali ultimo emarginato, tibiis anticis et intermediis curvatis, intus serrulatis.

Femina pygidio carinato, abdominis segmento ventrali ultimo sinuatim truncato, medio prominulo, tibiis anticis et intermediis parum curvatis.

Middle and Western States. So closely allied to *C. femorata*, that I separate it with some doubt; nevertheless, with several specimens before me, the anterior impression of the elytra seems to extend only as far as the subsutural costa, and there is no impressed spot anterior to it completing the fascia to the suture: the thorax is also only obsoletely or not at all channeled, and the punctures produce small transverse folds, not seen in *C. femorata*; otherwise there appears to be no special difference: the last ventral segment is, however, slightly less tumid anteriorly at the sides.

6. *C. Lesueuri*, depressa, obscura, ænescens, punctata, thorace subinæquali, canaliculato, antice paulo latiore, elytris costis solitis interruptis, fovea quadrata antica, alterisque duabus posticis fere confluentibus cuprascentibus, serratis, apice singulatim rotundatis; subtus cupreo-ænea, prosterno dense punctato, linea lævi notato. Long. 40—45.

Sexus differentia sicut in priore.

Laporte & Gory, Mon. Buprest. 2, 49, tab. 9, f. 66.

Middle and Southern States. Also closely related to the two preceding, but the anterior impression is a square fovea, situated on the second costa not extending to the subsutural, and the posterior impression is divided into two by the second costa; these two are obliquely placed, and are not confluent, though they sometimes nearly touch.

7. *C. obscura*, depressa, supra fere nigra, punctis ænescens, thorace subinæquali, canaliculato, elytris costis solitis, parce fortius punctatis, fovea quadrata antica, maculaque postica obliqua sinuata vage impressis, postice oblique angustatis serratis, apice singulatim breviter rotundatis; subtus cupreo-ænea, prosterno dense punctato. Long. 45.

Mas capite viridi, segmento ventrali ultimo emarginato, tibiis anticis et intermediis curvatis, intus serrulatis.

Femina pygidio carinato, segmento ventrali ultimo sinuatim truncato, ad basin linea lævi subelevata notato, tibiis anticis paulo curvatis, intermediis subrectis.

Southern and Western States. Also related to the three preceding species, but may be distinguished by the coarser and more sparse punctures of the elytra, and the more vague impressions. The thorax in my two specimens is scarcely wider in front, but I do not know if this will prove a constant character.

8. *C. misella*, latiuscula, depressa, obscura, ænescens, inæqualiter punctata, thorace inæquali, canaliculato, lateribus late roundatis, antice multo latiore, elytris costis solitis, hic inde dilatatis, suturali postice undulata, fasciis duabus densius punctatis ænescentibus, serratis apice singulatim rotundatis; subtus cupreo-ænea, prosterno dense punctato. Long. .30.

Mas capite virescente, segmento ventrali ultimo emarginato, tibiis anticis et intermediis curvatis, intus paulo serrulatis.

Femina haud obvia.

Three males; Saratoga, Mr. James Thomson. Differs from the smallest *C. femorata* by its still smaller size, and by the punctures, (especially of the elytra,) being irregularly diffused so as to leave occasional almost smooth spaces, and by the subsutural costa being undulated towards the tip of the elytra; the impressed spots are, as in the species mentioned, a transverse anterior fascia, completed by a subsutural spot, anterior to its main direction, and a posterior sinuated band.

#### A—b $\beta$ .

9. *C. quadrilineata*, fusco-ænea, fortiter punctata, obscura, latiuscula, depressa, thorace sulco dorsali profundo, costis duabus latis, calloque utrinque elongato sublævibus, elytris costis solitis tribus lævibus interruptis, secunda bis late dilatata. Long. .5—57.

Mas segmento ventrali ultimo emarginato, tibiis anticis curvatis, apice dilatatis; prosterno dense hirto, linea media glabra lævi.

Femina latet.

Santa Fé, New Mexico, Mr. Fendler. Robust, depressed, dull bronze, head very densely punctured, with two smooth spots between the eyes, and an occipital bifurcating line; front coppery; labrum green; antennæ green; third joint as long as the two following; thorax twice as wide as its length, rounded on the sides, deeply lobed at base; dorsal groove deep, densely punctured, sides rugosely punctured, with a large longitudinal callus extending from the tip nearly to the base, and a broad, shining, nearly smooth costa, contiguous to the dorsal groove. Elytra wider than the thorax, obliquely narrowed and finely serrate behind, then sparsely rounded at the apex; subsutural costa entire, gradually dilated towards the base, second costa reaching nearly to the tip, dilated at one quarter the length so as to join the third, and again more broadly behind the middle so as to touch the subsutural, then slightly interrupted; third, slender, interrupted behind, and confluent



with the second; fourth, slender, posterior, submarginal, reaching the apex; a short oblique elevated line runs from the base of the second to the subsutural, which it reaches opposite the first dilatation of the second costa. These elevations are all smooth and shining, the depressions are more coppery and densely punctured; body beneath dark-coppery, shining, coarsely punctured; prosternum flat, densely punctured, hairy, with a smooth medial line. Last segment of the abdomen with the sides oblique, lateral groove limited internally by a not very obvious serrate elevated line; lateral posterior angles of the other segments acute prominent.

10. *C. texana*, elongata, obscure ænea, subcinerea, punctata, thorace lateribus rectis, antice latiore, transversim rugoso, medio parcius punctato, subcanaliculato, lateribus impresso et callo angusto notato, elytris costis solitis interruptis, 2nda bis dilatata, spatiis fere lævibus, impressionibus vagis, lateribusque densius punctatis, serratis apice singulatim rotundatis, subtus fortiter, sterno densius punctato. Long. .42.

Mas segmento ventrali ultimo emarginato, tibiis anticis curvatis, apice subito dilatatis et oblique sulcatis, intermediis paulo curvatis.

Femina latet.

One specimen from Texas in the collection of Mr. Ulke. Behind the posterior impression, a little ridge, a part probably of the 2nd costa, becomes confluent with the subsutural costa, which is entirely straight. I do not know whether this will prove to be a permanent character.

11. *C. calcarata*, subdepressa, obscure ænea, fortiter punctata, thorace dorso sulcato, costis parcius punctatis, lateribus paulo inæquali, elytris costis solitis interruptis, intermedia postice fere obsoleta, impressione postica transversa, apice serratis singulatim rotundatis; tibiis intermediis fere rectis. Long. .35—.50.

Mas segmento ventrali ultimo breviter emarginato, tibiis anticis paulo curvatis ultra medium dente interno magno acuto armatis.

Femina segmento ventrali ultimo apice subinciso, tibiis anticis paulo curvatis.

Mels. Proc. Acad. Nat. Sc. Phila. 2, 149.

*Chrysobothris femorata* ‡ Laporte & Gory, Mon. Bupr. 2, 48, tab. 9, f. 65.

Middle and Southern States, not rare. In form and general appearance, resembles *C. dentipes*, but is usually smaller and readily distinguished by the above characters. The posterior elytral impression is composed of two confluent lobes, forming a transverse spot; in *C. dentipes* the same spot is oblique.

12. *C. cuprascens*, obscure cuprea, punctata, thorace subinæquali, subcanaliculato, lateribus rotundatis, elytris costis solitis interruptis, spatiis quadrato mox ante medium, alteroque postice majore impressis densius punctatis, serratis, apice singulatim rotundatis, subtus cupreo-ænea, prosterno dense punctato. Long. .30.

Mas capite ænescente, segmento ventrali ultimo emarginato, tibiis anticis paulo curvatis ultra medium dente magno armatis, posterioribus rectis.

Femina latet.

A single male from Santa Fé, New Mexico; Mr. Fendler. All the depressed portions

of the elytra are densely punctured, the first costa extends from the tip nearly to the base; the second commences at the middle of the base and reaches nearly to the tip; it is broadly interrupted by two quadrate impressions; the first, just in front of the middle; the second, slightly sinuate, behind the middle; the third costa is interrupted only by the posterior impression, immediately behind which it unites with the second.

13. *C. dentipes*, depressa, supra nigra cuprascens, fortiter punctata, thorace dorso sulcato, costis parcius punctatis, lateribus inæquali, elytris costis 3 solitis interruptis, impressionibus obliquis, apice serratis singulatim rotundatis. Long. 46—64.

Mas segmento ventrali ultimo emarginato, tibiis intermediis versus apicem intus subdilatatis, anticis parum curvatis apice sublatioribus.

Femina segmento ventrali ultimo apice minute inciso tibiis anticis et intermediis parum curvatis.

*Buprestis dentipes* Germ. Ins. Nov. 58.

*Buprestis characteristicæ* Harris, New Engl. Farmer, 8, 2.

*Chrysobothris planata* Laporte & Gory, Mon. Bupr. 2, 56, tab. 10, f. 77.

Lake Superior to Georgia: abundant. Readily known by the flat body, sulcate thorax and dark colour of the upper surface.

The last ventral segment in this and the next species is triangular, the sides nearly straight, with a submarginal groove, inside of which the surface is simply convex, without any distinct elevated line. The abdominal segments do not project strongly on the sides.

14. *C. trinervia*, depressa, obscura, punctis æneis, thorace inæquali sulcato, spatiis pluribus elevatis sublævibus, lateribus fere parallelis, elytris costis solitis interruptis et lineis transversis elevatis lævibus varie connexis, spatiis depressis dense punctatis, serratis apice singulatim rotundatis; subtus purpureo-ænea, medio cyanescens, prosterno rude punctato, tibiis posticis rectis. Long. 42—45.

Mas fronte prosterno femoribusque anticis viridibus, segmento ventrali ultimo emarginato, tibiis anterioribus curvatis, anticis apice oblique sulcatis et dilatatis.

Femina segmento ventrali ultimo apice anguste inciso, spatio basali triangulari lævi, tibiis intermediis subrectis, anticis curvatis.

*Buprestis (Odontomus) trinervia* Kirby, Fauna Bor. Am. 4, 157, tab. 2, f. 9: Mann. Bull. Mosc. 1853, 220.

*Chrysobothris cicatricosa* Motsch. Et. Entom. 1852, 77.

Lake Superior, Lake Winnipeg, Oregon and Washington Territories, and California. The colour beneath is somewhat variable. I have a male with the body entirely green, and a female in which it is coppery, with purple spots at the sides of the abdomen. The sides of the thorax are sometimes straight, sometimes rounded, but it is never obviously wider in front.

15. *C. scabripennis*, depressa, obscure cupreo-ænea, inæqualiter punctata, thorace inæquali sulcato, spatiis pluribus elevatis sublævibus, antice latiore, elytris costis solitis interruptis lineis transversis elevatis lævibus varie connexis, spatiis depressis dense punctatis, serratis, apice singulatim rotundatis; subtus cuprea, prosterno rude punctato, tibiis posticis curvatis. Long. 37—42.

Sexus differentia sicut in præcedente, sed tibiæ posticæ maris curvatæ.

Laporte & Gory, Mon. Bupr. 2, 53, tab. 9, f. 71.

New York, Maine, Lake Superior. Closely resembles the preceding, but the thorax is more abbreviated, and distinctly dilated in front, the costæ of the elytra are narrower and less connected by transverse smooth lines, the colour is more coppery, and finally the posterior tibiæ are curved, especially in the males.

16. *C. pusilla*, obscure cuprea, fere æqualiter dense punctata, thorace latitudine fere duplo brevior, lateribus rotundatis, subinæquali, sulco dorsali tenui, elytris costis tenuibus præcipue postice subreticulatis, fovea ante medium, fasciaque postica obliqua vage impressis, subtiliter serratis, apice singulatim rotundatis; subtus ænea, prosterno sat dense punctato. Long. .25—.32.

Mas segmento ventrali ultimo emarginato, tibiis anticis curvatis, ad apicem intus subito dilatatis, intermediis curvatis apice sublatioribus.

Femina segmento ventrali ultimo apice anguste emarginato, tibiis anticis paulo curvatis, reliquis rectis.

Laporte & Gory, Mon. Bupr. 2, 53, tab. 10, f. 72.

*Chrysobothris strangulata* Mels. Proc. Acad. Nat. Sc. Phila. 2, 147.

Middle and Southern States, rare. Differs from the following by the broader form and more densely punctured upper surface, as well as by the slightly unequal thorax, somewhat reticulated elytral costæ and more finely serrate elytra. The species varies somewhat in the form of the thorax, and in the elytral impressions: in some specimens the former is scarcely one half wider than its length, and the disc each side of the dorsal groove is less punctured: on the elytra the anterior impression is usually a vague fovea, but is sometimes prolonged obliquely upwards and outwards; the posterior one is oblique and sinuate, sometimes not very distinct: the costæ are narrow, and have a tendency to be connected by reticulations especially behind and outside of the posterior impression.

17. *C. debilis*, elongata, piceo-ænea, punctata, thorace latitudine vix sesqui brevior, lateribus parallelis, postice incurvis, transversim rugoso vix vage impresso, elytris costis parum distinctis, 3ia obsoleta, fovea quadrata ante medium, maculaque transversa sinuata pone medium impressis, cuprascentibus, serratis, apice singulatim rotundatis; subtus ænea, dense punctata, longius pubescens, abdomine medio parce punctato. Long. .30.

Mas segmento ventrali ultimo emarginato, tibiis anticis apice intus breviter dilatatis. Femina latet.

Western States: one male from Ohio, Dr. Schaum. The thorax is not all channeled, the punctuation is regular, and the elytral costæ straight.

18. *C. disjuncta*, cuprea, elongata, thorace punctato, transversim rugoso, latitudine vix sesqui brevior, lateribus parallelis postice incurvis, haud impresso, elytris sat dense minus subtiliter punctatis, costis solitis parum distinctis, fovea magna quadrata ante medium, alterisque duabus transversim positæ pone medium impressis, serratis, apice singulatim rotundatis; subtus ænea, sterno dense punctato. Long. .30.

Mas segmento ventrali ultimo emarginato, tibiis anticis paulo curvatis ad apicem breviter dilatatis. Femina latet.

One specimen, Arizona. Related to the preceding, but differs by the punctures of the

elytra being coarser than those of the thorax, and by the posterior impression being divided into two foveæ.

### B—c.

19. *C. acuminata*, ænea, thorace antice latiore, lateribus rectis prope apicem angulatis, punctato, parcus in disco, ad latera inæquali, elytris costis solitis interruptis, plagis elevatis sublævibus nitidis, alterisque depressis punctatis ornatis, serratis, apice singulatim acuminatis et spinula brevi armatis; subtus cupreo-ænea, sterno fere lævi. Long. .44—67.

Mas segmento ventrali ultimo postice late sulcato valde emarginato, apice utrinque bidentato, tibiis anticis et intermediis curvatis, intus serrulatis.

Femina segmento ventrali ultimo late truncato, angulis acutis prominulis, medio carina integra lævi signato, tibiis anterioribus paulo curvatis.

Tamaulipas, extending to Matamoras and probably into Texas; Dr. Berlandière. Quite distinct by the above characters from all the other species seen by me. The impressed spots are almost as in *Chalcophora virginensis*.

### B—d, $\alpha$ .

20. *C. gemmata*, depressa, supra læte purpurea, capite valde punctato, viridi-aureo, inæquali, cupreo-maculato, thorace tenui canaliculato, versus latera inæquali, viridi-aureo variegato, punctato parcus in disco, elytris sat dense æqualiter punctatis, costis solitis tenuibus interruptis, impressionibus utrinque 4 læte inauratis, strigae subhumerali ornatis, 2da et 3ia postice emarginatis; subtus viridiaenea, purpureo-variegata nitida, prosterno medio parce subtiliter punctato. Long. .88.

Femina segmento ventrali ultimo carina lævigata postice sensim attenuata, apice truncato, tibiis intermediis rectis, anticis paulo curvatis. Mas latet.

Lee. Proc. Acad. Nat. Sc. Phila. 1858, 67.

Two specimens collected by Mr. Arthur Schott in Arizona. The antennæ are purple, the third joint is as long as the three following. The last ventral segment is elongate, oblique, and even a little concave on the sides; the marginal groove is limited by an internal elevated serrate line; the posterior angles of the other segments are very prominent.

### B—d, $\beta$ .

21. *C. sexsignata*, obscura, subænescens, rude punctata, thorace brevi, lateribus præcipue subrectis, transversim rugoso, linea dorsali sæpissime lævi, interdum obsoleta, elytris costis parum distinctis, fovea basali, altera ante medium, tertiaque majore pone medium impressis, sæpissime cuprascentibus, serratis apice singulatim rotundatis; subtus sæpissime purpurea, medio cyanea, (nonnunquam ænea, medio viridis,) sterno dense punctato. Long. .28—50.

Mas capite viridi, segmento ventrali ultimo obsolete carinato, apice emarginato, tibiis anticis et intermediis curvatis, his paulo serrulatis.

Femina segmento ventrali ultimo carinato, apice minute emarginato, tibiis anterioribus paulo curvatis.

*Buprestis sexguttata* || Say, Journ. Acad. Nat. Sc. Phila. 3, 161.

*Buprestis sczsignata* Say, Trans. Am. Phil. Soc. 6, 158.

*Chrysobothris Germari* Laporte & Gory, Mon. Bupr. 2, 50, tab. 9, f. 67.

*Chrysobothris ignipes* Laporte & Gory, ibid., tab. 9, f. 68.

From Massachusetts to the Rocky Mountains. Varies very much in size, and also in form, but the punctuation more coarse than usual, and the posterior elytral impression forming but a single fovea, extending internally only to the 2nd costa, will readily distinguish it from all others found in the United States. The feet vary much in colour, usually they are bright copper, sometimes, however, they are green.

#### B—e, $\alpha$ .

22. C. a n a l i s, longiusecula, supra viridi vel purpureo-ænea, obscura, thorace lateribus rectis, punctato, valde transversim rugoso, elytris fortiter punctatis, costis fere obsoletis, ante medium oblique impressis, serratis, apice singulatim rotundatis; subtus nigro-ænea, sterno fortiter punctato, segmento ventrali linea submarginali acute elevata, fortiter serrata. Long. .31.

Mas segmento ventrali ultimo emarginato.

Femina segmento ventrali ultimo truncato, angulis prominulis, linea transversa subapicali acute elevata.

Matamoras; Dr. Berlandière: a fine green variety was received by Mr. Ulke from Texas. The serrate line of the last ventral segment is parallel with the margin and limits the usual submarginal groove; in the female this line is connected with the one on the opposite side by a transverse acutely elevated subapical line.

#### B—e, $\beta$ .

23. C. h y b e r n a t a, nigro-purpurea, vel atra, latiuscula, aequaliter fortiter punctata, thorace lateribus parallelis antice angulatis, elytris haud costatis, fovea basali, altera ad medium majore, duabus pone medium transversim positis, maculaque parva laterali ante medium lacte viridiaureis, fortius serratis, apice rotundatis; subtus nigro-ænea, fortiter punctata, sterno densius punctato. Long. .28—30.

Sexus differentia latet.

*Buprestis hybernata* Fabr. Syst. El. 2, 209.

*Chrysobothris viridipunctata* Laporte & Gory, 2, 21, tab. 4, f. 31.

? *Chrysobothris hybernata* Laporte & Gory, 2, 16, tab. 4, f. 24.

*Buprestis chrysellus* Illiger, Wiedem. Archiv. 1, 2, 122 (fide Laporte.)

Southern States. Six specimens are before me, all agreeing in having the last ventral segment truncate, with the angles prominent and acute. The gold of the basal fovea sometimes extends along the base to the humerus. The descriptions belonging to the two quotations from Laporte and Gory do not appreciably differ; the figure last quoted wants the lateral golden spot in front of the middle of the elytra, and the elytra are not represented as black.

24. C. c o n c i n n u l a, elongata, capite thoraceque viridi-æneis, rugose punctatis, hoc latitudine vix brevior, lateribus fere rectis, elytris haud costatis, atrocyaneis, haud dense fortiter punctatis, fovea basali, alteraque ad me.

dium viridiæneis, fascia haud impressa postica virescente ornatis, fortius serratis; subtus obscure cyanea, sterno dense, abdomine modice punctato, articulis intermediis parce punctatis. Long. .27.

Femina segmento ventrali ultimo truncato, angulis prominulis.

One specimen, Missouri. Much narrower than the next, with the elytra entirely without costae, and the posterior fovea replaced by a transverse greenish band not at all impressed.

25. *C. azurea*, latiuscula, læte cyanea, vel viridi-cyanea, æqualiter fortiter punctata, thorace brevi, lateribus rectis, postice incurvis, elytris costis obsoletis, fovea basali altera ad medium tertiaque postica impressis sæpe viridiæneis, serratis, apice rotundatis; abdomine parce, prosterno dense punctato. Long. .30.

Mas segmento ventrali ultimo emarginato.

Femina segmento ventrali ultimo subcarinato, truncato, angulis prominulis.

Lec. Proc. Acad. Nat. Sc. 1857, 8.

*Chrysobothris ultramarina* † Laporte & Gory, Mon. Bupr. 2, 13, tab. 3, f. 19.

Variat, capite thoraceque purpureis, elytris obscure cyaneis, foveis subviridibus.

Southern States. The variety approaches somewhat the description of *C. thoracica*, but the thorax is not bright coppery, nor are the elytra black: the locality given by Fabricius is the Island of St. Thomas, and I do not know on what authority Laporte and Gory give it as North American. The sides of the body and legs are sometimes coppery purple.

26. *C. Harrisii*, latiuscula, viridi-ænea, thorace brevi punctato et rugoso, lateribus rectis postice incurvis, dorso canaliculato, elytris sat dense punctatis, costis fere obsoletis, fovea ad medium lata profunda, duabusque vagis oblique positis, subtiliter serrulatis, apice rotundatis; abdomine modice, sterno dense punctato. Long. .30.

Mas segmento ventrali ultimo emarginato, tibiis anticis apice dilatatis.

Femina segmento ventrali rotundato, apice subemarginato.

*Buprestis Harrisii* Hentz, Journ. Acad. Nat. Sc. Phila. 5, 373, tab. 13, f. 1; Harris Ins. Inj. to Vege. 44.

Massachusetts, in twigs of white pine. The whole sternum, the legs and the sides of the thorax of the male, are of a more brilliant green, and somewhat coppery. This species resembles closely the preceding, but the elytra are less coarsely punctured and more finely serrate, and the posterior impression is not a single fovea, but two indefinite ones placed obliquely.

*C. scitula* Gory, and *C. chlorocephala* Gory seem to be closely allied to this species, but not sufficiently to enable me to suppress them into synonyms.

27. *C. æneola*, latiuscula, obscure ænea, æqualiter punctata, thorace brevi, lateribus postice incurvis, transversim rugoso, canaliculato, elytris costis obsoletis, impressione obliqua ante medium, alteraque postica vagis, vix obsolete serratis, apice rotundatis, abdomine modice, sterno fortius punctato. Long. .26—.30.

Mas segmento ultimo ventrali emarginato, cristaque parva transversa antepicali instructo; tibiis anticis apice breviter dilatatis.

Femina segmento ventrali ultimo rotundato, apice subemarginato.

Fort Riley, Kansas; Mr. John Xantus. Somewhat narrower than the preceding, and resembling on account of its form and colour a large *Anthaxia*.

#### B—f.

28. *C. Ulkei*, latiuscula cyaneo-viridis, capite foveato, haud dense punctato, thorace brevi, antice angustato, lateribus convexis rotundatis postice valde incurvis, confertim punctato, linea dorsali postica lævi, elytris confertim punctatis, haud costatis, foveis basalibus solis impressis, macula utrinque triangulari ante medium, fascia media introrsum sensim latiore, alteraque postica obliqua atris, serratis, apice rotundatis, abdomine paulo brevioribus; subtus fortiter, sterno dense punctato. Long. .60.

Femina segmento ventrali ultimo apice rotundato. Mas latet.

One specimen from Texas in the collection of Mr. Ulke, to whom I owe the opportunity of describing it.

29. *C. nigrofasciata*, læte viridiaenea, latiuscula, supra æqualiter fortiter sat dense punctata, thorace brevi, antice angustato, lateribus convexis rotundatis postice parum incurvis, elytris foveis basalibus solis impressis, maculis utrinque tribus, postica obliqua, nigro-cyaneis ornatis, serratis, apice rotundatis, abdomine brevioribus; subtus fortiter sat dense punctata. Long. .47—58.

Mas segmento ventrali ultimo late emarginato, angulis prominulis, antennis subpectinatis articulis 4—10 angulo externo prolongato.

Femina segmento ventrali ultimo subtruncato, angulis obtusis, antennis serratis.

Laporte & Gory, Mon. Bupr. 2, 21, tab. 3, fig. 32.

New Mexico, collected in May and June by Capt. J. Pope, while exploring the Llano Estacado: also found in Mexico.

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The following species are unknown to me, or cannot be identified.

*C. nigrifulva* Lap. & Gory, Mon. Bupr. 2, 54, tab. 10, f. 73.

*C. scitula* Gory, Mon. Bupr. 4, 160, tab. 27, f. 155.

*C. chlorocephala* Gory, Mon. Bupr. 4, 161, tab. 27, f. 156.

*C. errans* Gory, Mon. Bupr. 4, 172, tab. 29, f. 167.

*C. rugosula* Gory, Mon. Bupr. 4, 177, tab. 30, f. 172.

*C. floricola* Gory, Mon. Bupr. 4, 179, tab. 30, f. 175.

*C. dissimilis* Gory, Mon. Bupr. 4, 181, tab. 31, f. 177.

#### ACTENODES Lac.

1. *A. bella*, latiuscula, fusca, dense æneo-punctata, thorace transversim biimpresso, subrugoso, lateribus fere rectis, antrorsum paulo angustato, angulis posticis acutis, elytris transversim rugosis macula basali, duabus ante medium transversim positis, alteraque pone medium læte viridiaureis, sutura antice auro-micante, serrulatis apice vix rotundatis. Long. .55.

One specimen, Liberty county, Georgia. The head is channeled from the front to behind the middle; the eyes nearly meet on the occiput. The body beneath is strongly,

on the sternum densely punctured. The last ventral segment is broadly truncate with the angles prominent, and armed on the side with a tooth.

2. *A. acornis*, supra atra, vix ænescens, thorace confertim rugose punctato, transversim impresso, lateribus vix rotundatis fere parallelis, elytris dense fortiter scabro-rugosis, impressionibus vagis inæqualibus, serratis apice conjunctim subrotundatis; subtus nigro-ænea, vel cyanea nitida, punctata, sterno sæpe cuprascente dense punctato. Long. 4—47.

*Buprestis acornis* Say, Trans. Am. Phil. Soc. 6, 159.

*Chrysobothris punctata* Mels. Proc. Acad. Nat. Sc. 2, 147.

New York, Georgia, Mexico. The head in one specimen is tinged with green; the under surface varies greatly in colour, being either bronzed, black-bronzed, or dark blue. In five specimens before me the last ventral segment is truncate, with prominent angles; and has the lateral tooth strongly marked. The eyes approximate closely on the occiput.

#### GROUP VI.

In this group are species mostly of a linear form, having the antennæ inserted in large cavities, by which the epistoma is very much narrowed behind; it is usually broadly emarginate in front. The anterior part of the head is vertical, and the mouth is applied to the prosternum. The mentum is large, triangular and entirely corneous. The prosternum is broad, cuneate behind, scarcely angulated on the sides: the mesosternum usually moderate in size, completely divided. The scutellum in our species is transverse, acuminate behind, and usually transversely carinate, but in some foreign genera it is simply triangular. Each elytron is rounded or subangulated at base, so as to enter the base of the thorax, which thus becomes lobed. The tarsi are long, or moderate, and the ungues are strongly toothed. But two genera are found in the United States, to be distinguished by the form of the tarsi.

Tarsi postici articulo 1mo vix longiore	-	-	-	-	-	-	<i>Coræbus</i> .
Tarsi postici articulo 1mo sequentibus 3 æquali	-	-	-	-	-	-	<i>Agrilus</i> .

#### CORÆBUS Lap. (emend. Lac.)

1. *C. cogitans*, capite valde excavato, thoraceque obscure cupreis, hoc dense punctato, utrinque irregulariter maxime excavato, lateribus nigro-marginatis, elytris atris granulatis, fascia ad dodrantem alteraque subapicali obsolete cinereo-pubescentibus, subtus æneoniger. Long. 32—37.

*Buprestis cogitans* Weber, Obs. Ent. 75.

*Buprestis ignara* Fabr. Syst. El. 2, 211.

*Agrilus cogitans* Say, Trans. Am. Phil. Soc. 6, 164.

*Eumerus ignarus* Laporte & Gory, Mon. Bupr. 2, 4, tab. 1, f. 5.

*Rhæboscelis cogitans* Lec. Ent. Writings of Say, 2, 598.

Middle, Southern and Western States. Lacordaire has restricted *Rhæboscelis* to species



having antennal grooves on the sides of the thorax; and there appears to be no reason why the present species should not be placed in *Coræbus*. The prosternum is not lobed, but truncate anteriorly. *C. caliginosus* *Lap.* seems to be merely the common European *C. rubi*, with an erroneous locality.

#### AGRILUS Solier.

The species of this genus are numerous, and quite difficult to distinguish, and I am not without fear that in some cases with more abundant material for examination I may be found to have made errors. I have, however, endeavoured to prevent any ambiguity in identifying such forms as I have had before me, by calling particular attention to those characters in which they differ from those most closely allied.

According to the form of the unguis, our species constitute two large groups, to a certain extent parallel with each other, and in which species occur strongly resembling those of the opposite series.

- A. Ungues fere fissi, basi sub-connati, partibus internis arcuatis, apice contiguis.
- \* a. Elytra atra, subtilius confertissime granulata; capit thoraxque cuprea - - Sp. 1—3.  
 \* \* Elytra plus minusve metallica, minus subtiliter granulato-punctata.
- b. Frons subconvexa, subglabra - - - - - Sp. 4—9.
- c. Frons planissima pubescens (elytra fere seriatim punctata.) - - - - - Sp. 10.
- B. Ungues vel acute vel præcipue late dentati, dentibus apice haud contiguis.
- \* d. Thorax lateribus dense pubescentibus; elytra subtilissime granulata - - Sp. 11.  
 \* \* Thorax pube haud vittatus.
- e. Elytra impressionibus pubescentibus ornatis - - - - - Sp. 12—17.
- f. Elytra impressionibus pubescentibus nullis - - - - - Sp. 18—32.
- (Elytra densius granulato-punctata:
- Scutellum carinatum - - - - - Sp. 18—22.
- Scutellum planum - - - - - Sp. 23.
- Elytra fortius granulato-punctata: - - - - - Sp. 24—32.)

#### A—a.

1. *A. fuscipennis*, capite valde excavato, thoraceque cupreis, hoc vittis duabus pupureis, valde canaliculato, utrinque late excavato, elytris atris, subtus nigro-ænea. Long. .47—.51.

Gory, Mon. Bupr. 4, 238, tab. 29, f. 230.

Southern and Western States: the largest of our species.

2. *A. arcuatus*, fronte haud canaliculata, capite postice excavato, thoraceque cupreis, hoc fortius rugose punctata, antice transversim, postice et utrinque oblique valde impresso, angulis posticis obtuse carinatis, elytris atris, subtus nigro-ænea. Long. .25.

Say, Trans. Am. Phil. Soc. 6, 162.

*Buprestis arcuata* Say, Ann. Lye. Nat. Hist. New York, 1, 251.

*Agrilus cupricollis* Gory, Mon. Bupr. 4, 240, tab. 41, f. 232.

Southern States: differs from the rest by the impressed line not extending upon the front, by the coarser punctures of the thorax, by the deep transverse impression near the anterior margin, and by the obtusely carinate posterior angles. In one specimen there is a deep dorsal canal, which in the other is wanting.

3. *A. ruficollis*, fronte canaliculata, capite postice excavato, thoraceque cupreis, nonnunquam nigro-violaceis, hoc rugose punctato, utrinque oblique impresso, elytris atris; subtus nigro-ænea. Long. .53—.30.

Say, Trans. Am. Phil. Soc. 6, 161: Laporte and Gory, Mon. Bupr. 2, 60, tab. 13, f. 70.

*Buprestis ruficollis* Fabr. Ent. Syst. 1, 2, 214: Syst. El. 2, 215. Oliv. Ins. 32, 78, tab. 9, f. 101. Herbst, Col. 9, 249, tab. 155, f. 9.

Middle, Southern, and Western States: the larva, as observed by Prof. S. S. Haldeman, lives in the interior of stalks of *Rubus*.

#### A—b.

4. *A. torquatus*, valde elongatus, æneus, capite canaliculato viridi, occipite cupreo fortiter dense punctato, thorace medio purpureo, late canaliculato et biimpresso, lateribus cupreis subrectis oblique impressis, angulis posticis longe carinatis, elytris nigro-olivaceis, lateribus rectis dense granulatis, costa discoidali parum distincta, apice serratis rotundatis. Long. .30.

One specimen from Kentucky, Mr. J. Ph. Wild. Differs from *A. arcuatus* by the head less excavated, and the elytra more strongly granulate. The scutel is smooth, brassy, and not very strongly carinate: the elytra are narrowed regularly from the base nearly to the lip. The antennæ are a little shorter than the head and thorax, green and strongly serrate.

5. *A. fulgens*, æneus, capite canaliculato viridi, occipite æneo fortiter dense punctato, thorace cupreo, lateribus late rotundatis, profunde oblique impressis, medio canaliculato, et biimpresso, angulis posticis longe carinatis, elytris purpureis, lateribus sinuatis, fortius granulatis, apice serratis rotundatis. Long. .26.

One specimen, Missouri, Mr. Schuster. Also differs from *A. arcuatus* by the same characters as the preceding, from which it is at once known by its smaller size and different form: the oblique impressions of the thorax meet at the middle.

A specimen from Illinois entirely of a golden color appears to be a variety of this species.

6. *A. obliquus*, æneus, capite modice punctato fere glabro canaliculato, thorace rugose punctato, dorso canaliculato, lateribus late rotundatis, profunde oblique impressis, angulis posticis longe carinatis, elytris obscurioribus, dense subtilius granulatis, apice serrulatis obtusius rotundatis. Long. .32.

One specimen, Eagle Harbor, Lake Superior. Allied to the three following species, but

is distinguished by the more convex and less densely punctured head, and the very profound oblique lateral impressions of the thorax.

7. *A. defectus*, obscure-æneus, capite cuprascente, sat fortiter haud dense punctato, canaliculato, thorace latitudine haud brevior, vage impresso, lateribus subrotundatis impressis, angulis posticis brevissime fere obtuse carinatis, basi bifoveato, elytris fortiter dense granulatis, subunicostatis, apice singulatim rotundatis, serrulatis. Long. .16—.19.

Western States and Pennsylvania, Kansas. Differs from *A. æneus* and other species of division B. by the much shorter and almost obsolete basal carinæ of the thorax, as well as by the form of the unguis.

8. *A. otiosus*, valde elongatus, supra obscure viridis, capite subtilius granulato-punctato, postice vix impresso, thorace latitudine haud brevior vage impresso, lateribus rectis, modice impressis, angulis posticis breviter, sæpe fere obsolete carinatis, basi bifoveato, elytris obscurioribus dense granulatis subunicostatis, apice rotundatis serrulatis. Long. .16—.21.

Say, Trans. Am. Phil. Soc. 6, 163.

?*Agrilus virens* Gory, Mon. Bupr. 4, 259, tab. 43, f. 252.

Middle and Western States, Kansas. Differs from *A. egenus* chiefly by the head being more finely punctured, and the thorax less strongly rugous, with the basal carinæ shorter sometimes almost obsolete, and by the form of the unguis.

9. *A. pusillus*, obscure viridiæneus, capite convexiusculo modice punctato, subcanaliculato, thorace latitudine haud brevior, cyaneo variegato, lateribus subrotundatis profunde impressis, angulis posticis carinatis, basi bifoveato, elytris fortiter granulatis, apice serrulatis rotundatis et subacuminatis. Long. .12.

Say, Trans. Am. Phil. Soc. 6, 162.

*Buprestis pusilla* Say, Am. Soc. Nat. Hist. New York, 1, 252.

One specimen, Kansas. Smaller than any other species known to me. In addition to the above characters the punctures of the thorax are more distinct than usual, so that it appears rather reticulate than rugous.

#### A—c.

10. *A. difficilis*, elongatus, supra obscurus, æneo vel cupreo-tinctus, subnitidus, capite plano, luteo-pubescente, postice breviter sulcato, thorace rugoso, vage impresso, lateribus subrectis, postice subsinuatis anguste impressis, angulis posticis longe carinatis, elytris punctis fere subseriatis, postice confuse granulatis, apice serratis rotundatis; subtus cupreo-æneus, abdomine utrinque maculis luteo-pubescentibus serie duplici ornatis. Long. .36—.50.

Gory, Mon. Bupr. 4, 224, tab. 37, f. 215.

*Agrilus occidentalis* Uhler, Proc. Acad. Nat. Sc. Phila., 7, 416.

Western States, Dr. Harris and Mr. J. Ph. Wild. A very distinct species, but so indefinitely described by Mr. Gory, that were it not for his mentioning the hairy yellow spots of the abdomen, the determination would be doubtful, or indeed impracticable. One

series of these spots is marginal, above the lateral suture, the other is ventral, larger, triangular and less distinct.

## B—d.

11. *A. bilineatus*, viridi-ater, granulatus capite, postice modice sulcato, thorace lateribus, elytrorumque vitta utrinque aureo-pubescente, angulis posticis haud carinatis; subtus æneus, punctatus, abdominis margine pleurisque aureo-pubescentibus. Long. .28—.37.

Variat pube fere albida.

Say, Trans. Am. Phil. Soc. 6, 162.

*Buprestis bilineata* Weber, Obs. Ent. 74: Say, Ann. Lye. New York, 1, 250.

*Agrilus bivittatus* Kirby, Fauna Bor. Am. 4, 161.

*Agrilus flavolineatus* Mann. Enum. Bupr. 110.

*Agrilus aurolineatus* Gory, Mon. Bupr. 4, 248, tab. 41, f. 241.

From Maine to Louisiana, and the Rocky Mountains.

## B—e.

12. *A. granulatus*, æneus, granulatus, pube alba brevissima pruinosis, capite postice sulcato, thorace subcanaliculato bifoveato, lateribus impressis postice breviter sinuatis, antice latiore, angulis posticis acute breviter carinatis, elytris costa discoidali postice abbreviata, fovea basali maculisque duabus subsuturalibus albo-pubescentibus, apice subtiliter serratis rotundatis; subtus versus latera magis pubescente, abdomine maculis marginalibus albis. Long. .35.

Say, Trans. Am. Phil. Soc. 6, 162.

*Buprestis granulata* Say, Journ. Acad. Nat. Sc. Phila., 3, 162.

One specimen, Kansas: closely related to the succeeding species, but is easily known by the more finely serrate obtusely rounded tips of the elytra.

13. *A. quadriguttatus*, æneus, obscurus sæpe subolivaceus, granulatus, pube brevissima pruinosis, capite postice subsulcato, thorace basi medio impresso, disco bifoveato, lateribus impressis late rotundatis, antice paulo latiore, angulis posticis acute carinatis, elytra costa discoidali postice oblitterata, fovea basali maculisque duabus subsuturalibus albo-pubescentibus, apice fortius serratis et singulatim acute acuminatis; abdominis lateribus maculis albo-pubescentibus. Long. .35—.39.

Gory, Mon. Bupr. 4, 228, tab. 38, f. 219.

Middle, Southern and Western States. Sufficiently distinct from the preceding by the elytra, more gradually narrowed behind and acuminate at tip, and by the thorax not being sinuate on the sides near the base.

14. *A. subfasciatus*, æneus, granulatus, pube brevissima pruinosis, capite virescente, postice vix sulcato, thorace medio obsolete biimpresso, lateribus impressis late rotundatis, antice haud latiore, angulis posticis longe carinatis, elytris costa discoidali postice obsoleta, fovea basali, macula antica, fasciisque duabus ad medium et pone medium pubescentibus, fascia intermedia obscure purpurea, apice serrulatis obtuse rotundatis. Long. .2.

One specimen, Illinois, Mr. Willcox. Differs from the next, not only by the sides of

the thorax being rounded, but by having pubescent spots outside of the discoidal costa, thus forming transverse bands.

15. *A. fallax*, obscure æneus, granulatus, capite tenuiter canaliculato virescente, thorace vage canaliculato, latitudine haud brevior, lateribus impressis vix rotundatis postice subsinuatis, margine superiore antice duplici, angulis posticis longe carinatis, elytris costa discoidali prope apicem obsoleta, fovea basali maculisque duabus subsuturalibus pubescentibus, apice serrulatis rotundatis. Long. .23.

Say, Trans. Am. Phil. Soc. 6, 163.

*Agrilus impressipennis* Uhler, Proc. Acad. Nat. Sc. 7, 416.

Middle and Western States. The lateral margin of the thorax diverges into two as usual, but the upper one of these is accompanied by a fine approximate raised line from the middle to the anterior angle: a slight vestige of a similar line very near the anterior angle is seen in *A. subfasciatus*, but is entirely wanting in the next.

*A. zemes* Gory, Mon. Bupr. 4, 234, tab. 39, f. 225, is perhaps a variety of this species, in which the basal and middle pubescent spots are wanting, but the head is mentioned in the description as being not impressed.

16. *A. interruptus*, nigro-æneus, granulatus, capite postice leviter sulcato, thorace vage canaliculato, latitudine haud brevior, lateribus impressis rectis, angulis posticis longe carinatis, elytris costa discoidali postice obsoleta, fovea basali, lineola ante medium maculaque postica subsuturali pubescentibus, altera externa ad medium sæpe deficiente, apice serratis rotundatis. Long. .24—.32.

Southern and Western States. Sufficiently distinct from the preceding by the simple superior thoracic margin: the pubescent line of the elytra extends from the basal fifth to the middle; sometimes it is by abrasion divided into two spots: a little behind its termination there is a small external pubescent spot, to be seen in well preserved specimens. The sides beneath are pubescent.

*A. obsoleto-guttatus* Gory, Mon. Bupr. 4, 256, tab. 43, f. 249, is perhaps this species, but the description is somewhat indefinite, and the figure gives but little assistance in determining it.

17. *A. subcinctus*, obscure æneus, capite sulcato, thorace rugose punctato canaliculato, lateribus subito depressis, angulis posticis acutis planis, basi depresso, elytris fortiter granulatis, impressis, spatiis pubescentibus variegatis, sutura elevata. Long. .12—.15.

Gory, Mon. Buprest. 4, 248, tab. 42, 245.

New York; rare. Resembles at first sight *A. subfasciatus*, but is at once distinguished by the sulcate head, and flat thoracic angles.

#### B—f.

18. *A. latebrus*, obscure cyaneus vel nigro-viridis, granulatus, capite postice modice sulcato, thorace canaliculato, antice posticeque impresso, lateribus profunde impresso maculaque parva albo-pubescente ornato, angulis posticis subcarinatis; abdominis lateribus pleurisque maculis albo-pubescentibus signatis. Long. .31—.44.

Laporte and Gory, Mon. Bupr. 2, 38, tab. 9, f. 50.

*Agrilus acutipennis* Mann. Enum. Bupr. 109: Gory, Mon. Bupr. 4, 225, tab. 37, f. 216.

*Agrilus quadriimpressus* Ziegler, Proc. Acad. Nat. Sc. 2, 267.

Middle and Southern States, Kansas.

19. *A. torpidus*, obscurus, ænescens, capite plano pubescente confertim punctato, postice canaliculato, thorace rugose punctato, dorso late sulcato, lateribus late rotundatis oblique impressis, angulis posticis longe carinatis, elytris dense subtilius granulatis, apice angustius rotundatis, serratis. Long. .37.

Lake Superior and Illinois. The elytra have a very faint discoidal costa, but hardly so obvious as to attract attention. This species is to be distinguished from the next two species by the pubescent front, and strongly carinate thoracic angles.

20. *A. anxius*, obscurus, ænescens, vel virescens, capite planiusculo, vix pubescente confertim punctato, postice canaliculato, thorace rugose punctato, dorso late sulcato, et bifoveato, lateribus rotundatis impressis, angulis posticis vix obsolete carinatis, elytris dense subtilius granulatis, apice serratis obtuse rotundatis, et brevissime acuminatis. Long. .35—.41.

Gory, Mon. Bupr. 4, 226, tab. 37, f. 217.

One specimen from Massachusetts, Dr. Harris; another larger specimen in the collection of Mr. Ulke. Differs from the next species by the longitudinal furrow of the head being longer and deeper, and by the posterior thoracic angles being less distinctly carinate; the elytra have a very faint discoidal costa, they are less narrowed behind, the tip is more broadly rounded, with a very short prominent point at the middle; the head of the smaller specimen is tinged with purple, and the thorax is more brassy than the elytra.

21. *A. gravis*, obscurus, supra subplumbeus, capite planiusculo, vix pubescente, confertim punctato, postice canaliculato antice vage transversim impresso, thorace rugose punctato, dorso late sulcato, et bifoveato, lateribus rotundatis impressis, angulis posticis obtuse carinatis, elytris dense subtilius granulatis, apice serratis obtuse rotundatis. Long. .37—.40.

Lake Superior and New York. This and the three preceding species, are to be distinguished from the next two, by the sides of the thorax being strongly impressed, and the head more or less channeled; the characters above given will separate each from the others.

22. *A. plumbeus*, præcipue plumbeo-æneus, obscurus, capite plano, vix pubescente, confertim punctato postice haud vel vix canaliculato, thorace rugose punctato antice latiore, lateribus rotundatis postice subsinuatis vix impressis, angulis posticis breviter carinatis, transversim vage impresso, elytris dense subtilius granulatis, apice obtuse rotundatis serratis. Long. .27—.37.

Middle and Western States, and Lake Superior; abundant. An easily distinguished species, varying somewhat in colour and in the impressions of the thorax; the latter is sometimes vaguely channeled, and nearly always has a faint transverse impression about the middle; the concave margin is narrower than in the preceding species, owing to the less development of the lateral impression.

23. *A. muticus*, cyaneo-plumbeus, obscurus, capite canaliculato, vix pubescente, confertim punctato, thorace rugose punctato, dorso pone medium sulcato, lateribus subrectis postice subsinuatis anguste impressis, angulis posticis haud alte carinatis, elytris dense subtilius granulatis, apice haud serratis, rotundatis, sutura paulo prolongata obtusa, scutello plano. Long. .33.

Lec. Proc. Acad. Nat. Sc. Philad. 1858, 70.

One specimen collected in Texas by H. Haldeman, Esq. Differs from all the allied species, not only by the elytra being not serrate, but by the tips being rounded only from the outside, so as to leave the suture prominent, though obtuse.

24. *A. macer*, valde elongatus, cupreo-æneus, capite dense punctato, vix pubescente late canaliculato, thorace rugoso quadrato, lateribus rectis profunde impressis, angulis posticis carinatis, elytris costa discoidali granulatis, apice fortius serratis, anguste rotundatis et acuminatis, scutello impresso haud carinato. Long. .35.

Lec. Proc. Acad. Nat. Sc. Philad. 1858, 70.

Eagle Pass, Texas, Mr. Schott, one specimen. The elytral costa is distinct and extends to the tip.

25. *A. cupreolus*, elongatus, æneo-cupreus, capite dense punctato, postice breviter canaliculato, thorace latitudine brevior, lateribus late rotundatis, vage canaliculato, oblique transversim impresso, angulis posticis carinatis, elytris juxta suturam late sulcatis, antice sat fortiter postice subtiliter granulatis, apice serratis anguste rotundatis. Long. .37.

One specimen, probably from Kansas. The discoidal costa is very obtuse, and is rather produced by a shallow broad subsutural furrow than by a distinct elevation; the under surface is more pruinose than usual with short white pubescence.

26. *A. obolinus*, minus elongatus, æneo-cupreus, capite fortiter punctato, profunde sulcato, thorace latitudine brevior, antice magis convexo, late canaliculato, lateribus subrotundatis profunde impressis, angulis posticis carinatis, elytris costa dorsali obsoleta, antice fortius postice subtilius granulatis, apice serratis obtuse rotundatis, scutello plano. Long. .34.

One specimen from Kansas. Differs from all the other species known to me except *A. macer* and *muticus*, by the scutellum being destitute of a transverse carina. The thorax is not wider before the base, and is only slightly rounded on the sides.

27. *A. politus*, purpureus, cupreus, aureo-cupreus vel obscure æneus subnitidus, capite dense punctato, vage bifoveato, postice subcanaliculato, thorace latitudine brevior, ante basin latiore, lateribus rotundatis anguste impressis postice subsinuatis, vage canaliculato et impresso, angulis posticis carinatis, elytris sat fortiter granulatis, apice serratis rotundatis. Long. .25—.33.

Say, Trans. Am. Phil. Soc. 6, 162.

*Buprestis polita* Say, Ann. Lyc. Nat. His. New York, 1, 249.

From Maine to Kansas; not rare. The elytra are gradually obliquely narrowed behind, so as to appear slightly prolonged, and are well rounded at the tip; the front is frequently varied with green; between the eyes are two shallow round impressions. I have one specimen in which the head and thorax are dark brassy and the elytra blackish green.

28. *A. desertus*, æneus, subnitidus, capite dense punctato, postice sulcato thorace latitudine brevior, postice canaliculato, ante basin paulo latiore, lateribus oblique late rotundatis oblique profunde impressis, angulis posticis carinatis, elytris sat fortiter dense granulatis, apice serratis rotundatis. Long. .24.

One specimen found at the Junction of the Colorado and Gila Rivers, California. Closely resembles the preceding, but the thorax is more deeply impressed on the sides; the elytra are more densely granulate, less prolonged and more obtusely rounded at the apex, and the occiput is more densely impressed.

29. *A. puncticeps*, obscurus ænescens, elongatus, capite pubescente medio fortiter haud confluentur punctato, occipite paulo canaliculato, thorace latitudine haud brevior dorso biimpresso, lateribus subrectis fortiter impressis, basi bifoveato, angulis posticis longe carinatis, elytris sat fortiter dense granulatis, sub-unicostatis, apice subserratis rotundatis. Long. .20—.25.

? *Buprestis geminata* Say, Journ. Acad. Nat. Sc. 3, 163.

? *Agrilus geminatus* Say, Trans. Am. Phil. Soc. 6, 162.

? *Agrilus nigricans* Gory, Mon. Bupr. 4, 257, tab. 43, f. 250.

Middle and Southern States. In this and the species below described, the base of the thorax, inside of the carina, is deeply foveate, so as to make the basal carina very acute; the carina itself is about two-fifths the length of the thorax. The punctures of the middle of the head are large and not close, the occiput is rugous.

The descriptions of Mr. Gory do not apply with such precision that I am altogether free from hesitation in using his names for any of the smaller species known to me, and unfortunately his figures do not exhibit any distinguishing character.

30. *A. cephalicus*, obscurus, ænescens, capite cupreo, haud pubescente fortiter haud confluentur punctato, sat profunde canaliculato, thorace latitudine haud brevior, dorso canaliculato et biimpresso, lateribus subrectis fortiter impressis, basi bifoveato, angulis posticis oblique carinatis, elytris sat fortiter dense granulatis, subunicostatis, apice subserratis rotundatis. Long. .18—.25.

Middle States and Lake Superior. A species very similar to *A. puncticeps*, but differing by the head being deeply channeled, with the sides convex; the groove widens and becomes shallow on the front, so as to produce a triangular depressed space; the carinae of the posterior angles of the thorax are more oblique, and shorter, but in this respect, as well as in the pubescence of the front there is not a precise accordance between the specimens referred by me to *A. puncticeps*, and it is possible that with increased material there will be found in it representatives of two or more species.

31. *A. egenus*, obscurus, ænescens, capite viridi, pubescente, granulato-punctato, occipite paulo canaliculato, thorace latitudine haud brevior, lateribus late rotundatis impressis, angulis posticis carinatis, basi bifoveato, elytris fortiter dense granulatis, subunicostatis, apice singulatim rotundatis serrulatis. Long. .17—.21.

? *Agrilus egenus* Gory, Mon. Bupr. 4, 258, tab. 43, f. 251.

Middle States: a species also closely resembling the two preceding ones, but differing



by the head, which is green, and covered with a tolerably coarse punctuation, having the appearance of granulation. I have for this reason considered it as Mr. Gory's species, though his expression "ecusson très-petit" leaves me in doubt regarding the justice of the determination; after careful comparison, I can perceive no difference between the scutellum of this and several other species which I have placed near it. The carinæ of the posterior angles of the thorax are one third the length of the thorax and oblique upwards.

32. *A. lacustris*, fusco-æneus, cinerascens, capite convexiusculo, dense fortiter punctato, subcanaliculato, thorace fortius rugoso, latitudine haud brevior, lateribus rectis vix impressis, angulis posticis carinis parum elevatis, basi bifoveato, elytris fortius dense granulatis, apice rotundatis serratis. Long. 20—23.

Mas segmento ventrali ultimo truncato-emarginato apice hirto.

Femina segmento ventrali ultimo apice rotundato.

Lake Superior, at Lapointe. Readily recognised by the almost entire absence of the lateral impressions of the thorax.

---

The following species are unknown, or not identified with certainty.

*A. vittaticollis* Randall, Bost. Journ. Nat. His. 2, 38. *A. frenatus* Gory, Mon. Bupr. 4, 139, tab. 40, f. 231.

*A. zemes* Gory, vide No. 15.

*A. obsoletoguttatus* Gory, vide No. 16.

*A. nigricans* Gory, vide No. 29.

*A. virens* Gory, vide No. 8.

*A. lateralis* Say, Trans. Am. Phil. Soc. 6, 162; *Bupr. lateralis* Say, Journ. Acad. Nat. Sc. Phil. 3, 160.

*A. putillus* Say, Trans. Am. Phil. Soc. 6, 162.

*A. geminatus* Say, Trans. Am. Phil. Soc. 6, 162; *Bupr. geminata* Say, Journ. Acad. Nat. Sc. Phila. 3, 163; vide No. 29.

#### GROUP VII.

We have here very small species, usually of a broad ovate form, though rarely sub-linear, in which the antennæ are inserted in large cavities narrowing the epistoma, and frequently received in deep grooves extending below the eyes on to the under surface of the thorax. The front is strongly inflexed, and the mouth is applied to the prosternum. The mentum is large, triangular and entirely corneous. The prosternum is variable in form, being either pointed behind, and not angulated on the sides; deeply cleft; or broad and truncate. The mesosternum is very small, with the portions widely separated and sometimes hardly visible. The scutellum is triangular, and sometimes very large: the thorax is more or less lobed at the base. The legs are capable of being applied closely to the body, the tibiæ are sometimes sulcate for the reception of the tarsi, which are always

very short; the unguis are strongly toothed. Our species have been divided into three genera, which have, however, been reunited by Lacordaire into a single genus, distinguished by having the antennæ received in grooves.

### BRACHYS Solier.

The species of this genus form several very distinct groups, which I should consider as genera, but that Lacordaire states that they merge imperceptibly together. Those found in our territories may be thus arranged.

- |  |   |   |   |          |
|--|---|---|---|----------|
| A. Corpus elongatum, prosternum angustum, (Taphrocera Sol.)-                                   | - | - | - | Sp. 1.   |
| B. Corpus ovatum, prosternum postice fissum, (Brachys Sol.)                                    | - | - | - | Sp. 2—6. |
| C. Corpus ovatum, prosternum latum integrum  | - | - | - | Sp. 7    |
| D. Corpus triangulare, prosternum latissimum, tibiæ dilatatæ, (Metonius Say, Pachyseelis Sol.) |   |   |   | Sp. 8—9. |

#### A.

1. *B. gracilis*, elongata, æneo-nigra, capite late excavato, thorace inæquali, elytris antice seriatim punctatis, guttis nigro-æneis fasciisque vagis parce albo-pubescentibus sæpe ornatis; ano rotundato, haud serrato, segmento ventrali ultimo sulco marginali circumducto. Long. 14—21.

*Trachys gracilis* Say, Ann. Lyc. Nat. Hist. New York, 1, 253.

*Aphanisticus gracilis* Say, Trans. Am. Phil. Soc. 6, 165.

*Brachys* (*Taphrocera*) *albo-guttata* Mann. Enum. Bupr. 120; Laporte & Gory, Mon. Bupr. 2, tab. 1, f. 1.

Middle and Southern States.

#### B.

2. *B. ovata*, antice triangularis obtusa, postice sensim angustata, ænea, capite valde excavato, thoraceque inæquali fulvo-pubescentibus, elytris parce irregulariter punctatis, fasciis albo fulvoque pubescentibus sinuatis ornatis, costa angusta versus latera lineisque discoidalibus obsoletis instructis; ano late truncato, pectinato, segmento ventrali ultimo sulco ambiente, maris postice emarginato, longe ciliato, femina truncato. Long. 19—25.

*Buprestis ovata* Weber Obs. Ent. 76: Herbst, Käfer, 9, 245, tab. 156, f. 1.

*Trachys tessellata* Fabr. Syst. El. 2, 218.

*Brachys aurulenta* Kirby, Fauna Bor. Am. 162.

*Brachys molesta* Gory, Mon. Bupr. 4, 332, tab. 56, f. 325.

*Brachys tessellata* Laporte & Gory, Mon. Bupr. 2, 3, tab. 1, f. 2.

Middle, Southern and Western States. The last synonym belongs to the smaller variety.

3. *B. lugubris*, antice triangularis obtusa, postice sensim angustata, supra nigra, capite valde excavato, thoraceque inæquali parce albo-pilosis, elytris vage punctatis, fasciis sinuatis albo-pilosis, costa angusta versus latera instructis; ano late truncato, subtiliter pectinato, segmento ventrali ultimo sulco marginali ambiente, maris emarginato ciliato, femina truncato. Long. 21—25.

Middle and Southern States. Only differs from the preceding by the pubescence being entirely white, and the tip of the abdomen more finely pectinate: the body is perhaps a little less attenuated behind, and more rounded.

4. *B. lævicauda*, antice triangularis obtusa, postice sensim angustata, supra nigra, capite valde excavato, thoraceque inæquali parce fulvo pilosis, elytris vage punctatis, faciis sinuatis fulvo alboque pilosis ornatis, costa angusta versus latera instructis; ano late truncato, vix subtiliter pectinato, segmento ventrali ultimo sulco marginali ambiente. Long. ·19.

One specimen, Pennsylvania. Differs from the two preceding by the tip of the abdomen being scarcely at all pectinate; the posterior band of white hair is also broader and more oblique.

5. *B. terminans*, antice triangularis obtusa, postice sensim angustata, supra nigro-ænea, capite valde excavato, thoraceque inæquali fulvo pilosis, elytris vage punctatis, parce fulvo-pilosis, fascia lata ante apicem fulvo-pilosa, costa angusta versus latera instructis, ano rotundato subtiliter pectinato, segmento ventrali ultimo sulco marginali ambiente. Long. ·17—·15.

Laporte & Gory, Mon. Bupr. 2, 3, tab. 1, f. 3.

*Trachys terminans* Fabr. Syst. El. 2, 219.

*Brachys ærosa* Mels. Proc. Acad. Nat. Sc. Phila. 2, 148.

Middle and Southern States to Kansas.

6. *B. æruginea*, antice triangularis obtusa, postice sensim angustata, supra ænea, capite valde excavato, thoraceque inæquali parce fulvo-pilosis, elytris vage punctatis, fasciis transversis fulvo-pilosis ornatis, costa angusta versus latera instructis; ano subrotundato, pectinato, segmento ventrali ultimo sulco marginali ambiente. Long. ·13—·15.

Gory, Mon. Bupr. 4, 335, tab. 56, 329.

Middle and Southern States; rare. The description of Gory does not mention the most peculiar characters of this species, which only differs from *B. tessellata* by having no white hairs intermixed with the fulvous ones, by the smaller size, and by the less distinctly truncate tip of the abdomen; the posterior elytral fascia is somewhat farther removed from the apex.

### C.

7. *B. carbonata*, antice triangularis obtusa, postice sensim rotundatim angustata, nigra nitida glabra, capite antice canaliculato, thorace convexo, lateribus et basi subito depresso, elytris antice vage punctatis, basi profunde lateribus modice impressis; ano rotundato, haud serrato, abdomine segmentis tribus posticis sulco marginali ambiente, prosterno grosse punctato. Long. ·14.

One specimen, Louisiana, Mr. Guex. Of the size of the preceding, but more rounded behind; shining black; head convex behind, channeled in front. Thorax more than twice as wide as long, broadly rounded on the sides, disc very convex, sides and base suddenly depressed, posterior angles slightly prolonged acute: base sinuate, middle lobe broadly truncate: scutellum triangular, large. Elytra as wide as the base of the thorax, sides straight for two-thirds the length, then rounded obliquely to the tip; a few scattered punctures are seen towards the base, which is very deeply impressed; a lateral impression before the middle extends nearly to the humerus, which is much elevated. Abdo-

men with the last three segments margined with a fine lateral furrow; the tip is rounded, not serrate. Prosternum triangular, broad, grossly punctured: metasternum deeply emarginate. Tibiæ not visible.

D.

8. *B. purpurea*, brevis triangularis, nigra, capite subtilius canaliculato, thorace versus angulos posticos vage punctato vix depresso, elytris nigro-cyaneis, lateribus antice fortiter impressis, antice seriatim punctatis, fascia postica obliqua guttisque nonnullis albo-pilosis. Long. .14.

*Metonius purpureus* Say, Trans. Am. Phil. Soc. 6, 164.

*Brachys americana* Gory, Mon. Bupr. 4, 346, tab. 58, f. 343.

Middle and Western States; rare. In this and the next species the scutellum is very large, the prosternum very broad, almost truncate behind, the tibiæ flattened and dilated, and the entire abdomen surrounded with a deep marginal groove: the tip is rounded, not serrate.

9. *B. lævigata*, late ovata, nigra, capite grosse parce punctato, canaliculato, thorace lateribus postice subito depressis obsolete punctatis, elytris lateribus antice valde impressis, antice fere irregulariter punctatis. Long. .10—.12.

*Trachys ovata* Say, Ann. Lyc. Nat. Hist. New York, 1, 252.

*Trachys lævigata* Say, Trans. Am. Phil. Soc. 6, 164.

*Metonius ovatus* Say, Trans. Am. Phil. Soc. 6, 164.

*Brachys punctata* Gory, Mon. Bupr. 4, 347, tab. 59, f. 344.

Middle and Southern States to Kansas. Not so broad as the preceding, less attenuated behind, with the sides of the elytra more rounded.

GROUP VIII.

I have placed in a separate group a very small species, which differs by many characters detailed below from those which precede. The body is cylindrical, the antennæ inserted in large cavities, by which the epistoma is narrowed, but does not enlarge again distinctly in front as in the three preceding groups. The mouth is inferior, not applied to the prosternum; the front is vertical, slightly convex; the mentum large, corneous, triangular. The prosternum is broad, truncate both before and behind: the mesosternum not visible. The scutellum is triangular and small. The thorax is truncate at base. The legs are not contractile, the tarsi moderately short, with the membranous lobes large; the ungues are broadly toothed.

HAPLOSTETHUS *Lec.*

Antennæ liberæ, foveis insertæ, articulis 1 et 3 crassis, 3io angusto; 4—10 triangularibus, 11mo ovali, capite thoraceque haud breviores. Caput rotundatum, ore infero, labro transverso, palpis brevibus crassiusculis, mento magno triangulari toto corneo, sub oculos late sulcatum. Thorax transversus, convexus, basi truncatus, lateribus rotundatis, margine laterali duplici, subtus haud sulcatus: prosternum latum, antice posticeque truncatum. Mesosternum haud conspicuum; metasternum prosterno arcte applicatum. Elytra thorace angustiora cylindrica,

postice obtusa, basi profunde transversim impressa: scutellum parvum triangulare. Pedes haud retractiles, tibiis angustis, tarsis tibiis duplo brevioribus articulis 1—4 subtus longe lobatis, 5to longiore tenui, unguiculis haud connatis, basi late obtuse dentatis. Abdomen segmentis 1 et 2 sutura obsoleta, ultimo late rotundato.

This genus is represented by a single species, the smallest Buprestide known to me.

1. *H. subcyaneus*, cylindricus, niger nitidus, glaber, haud dense punctatus, capite canaliculato, thorace latitudine paulo brevior, convexo, lateribus valde rotundatis, elytris basi fortiter transversim impressis, lateribus pone humeros foveatis, thorace paulo angustioribus, nigro-cyaneis, apice obtuse rotundatis. Long. .08—10. Tab. XII., fig. 8.

Middle, Southern and Western States; on leaves or flowers, captured in the sweeping net; rare. The body is punctured beneath, very much as on the upper surface, but the punctures of the anterior part of the abdomen are a little less impressed. The lateral impression of the elytra behind the humerus is small.

## APPENDIX.

### MELANOPHILA Esch.

10. *M. prasina*, latiuscula, supra cyaneo-viridis, dense rugose punctata, brevissime pubescens, thorace latitudine brevior, antrorsum paulo angustato, lateribus late rotundatis, medio obsolete canaliculato, disco cyaneo, lateribus late viridibus, elytris apice subtilissime serrulatis; subtus cupreo-ænea, punctata, breviter cinereo-pubescens. Long. .43.

San Mateo, California; sent me by Andrew Murray, Esq., of Edinburgh. Of the same form as *M. fulvoguttata*, but finely pubescent like *M. æncola*. The fifth ventral segment is subtruncate, with the apical margin depressed.

### ACMÆODERA Esch.

11—12. *A. Hepburnii*, subcuneiformis, obscure ænea, hirta, thorace latitudine duplo brevior, lateribus oblique rotundatis, sat dense punctato, medio triangulariter, versus latera oblique profunde impresso, lateribus postice flavis; elytris striis punctatis, postice et extrorsum impressis, interstitiis uniseriatim punctulatis; margine ante medium, vitta a basi ad medium extensa, cum margine fascia lata connexa, fasciis duabus obliquis posticis; guttaque apicali flavis, postice serratis, conjunctim rotundatis; subtus fortiter punctata, modice pubescens. Long. .39.

One specimen sent me with the others here described, by Mr. Murray. I have dedicated it to Mr. William Hepburn, of San Francisco, by whom it was collected. It has nearly the form of *A. pulchella*, but is quite distinct by the above characters. There are two small marginal black dots, the first at the junction of the anterior fascia with the margin, the other in the second fascia.

### CHRYSOBOTHRIIS Esch.

5—6. *C. semisculpta*, depressa, minus elongata, obscura, ænescens, capite antice minus dense punctato, cuprascente, thorace antice paulo latiore, lateribus rugose, medio parcius punctato, subcanaliculato, elytris costis solitis interruptis parce punctatis, macula transversa antica, alteraque postica sinuata impressis, sat dense punctatis, serratis singulatim rotundatis; subtus cupreo-ænea, prosterno grossius punctato. Long. .44.

One female from California, kindly sent to me by Andrew Murray, Esq. Resembles *C. femorata*, but differs from that and the allied species by the more sparse punctuation of the upper surface, and by the more coarse punctures of the prosternum. The middle smooth line of the latter, frequently obsolete or wanting in *C. femorata*, is here not visible. The anterior transverse impression of the elytra does not extend within the first elevated line.

11—12. *C. contigua*, depressa, minus elongata, cupreo-ænea, capite antice minus dense punctato, thorace antice paulo latiore, fortiter punctato, parcius in medio, canaliculato, elytris obscure æneis, costis indistinctis, fortiter punctatis, impressionibus utrinque duabus transversis vagis punctatis spatiisque contiguis parcius punctatis, apice serratis singulatim rotundatis, tibiis intermediis rectis. Long. .30.

Mas segmento ventrali ultimo breviter emarginato, tibiis anticis paulo curvatis, ultra medium dente interno acuto armatis. Femina latet.

One male from California kindly sent me by Mr. Murray. Readily distinguished by the above characters. The impressions of the elytra are deep but badly defined, and the punctures in them are scarcely more dense than on the general surface towards the base: the portions contiguous to the impressions are very sparsely punctured. The prosternum is coarsely and tolerably densely punctured and slightly hairy.

13—14. *C. californica*, depressa, obscure cupreo-ænea, capite antice dense punctato, thorace lateribus parallelis utrinque incurvis, rude punctato, cicatricoso, dorso profunde sulcato, costa utrinque lata lævi nitida calloque versus latera notato, elytris costis solitis elevatis lævibus nitidis interruptis transversim subconnexis, spatiis depressis fortiter dense punctatis, subtiliter serratis apice singulatim rotundatis; subtus fortiter punctata, prosterno hirto. Long. .70.

Mas segmento ventrali ultimo profunde emarginato, tibiis anticis ad apicem introrsum subito dilatatis et sulcatis. Femina latet.

One specimen from California: Mr. Murray. A fine species allied to *C. trinervia*, but abundantly distinct by its larger size, and by the less frequent connexions between the smooth elevations of the elytra.

18. *C. deleta*, longiuscula, fusco-ænea, capite paulo pubescente, haud dense punctato vage impresso, thorace brevi, punctato, et transversim rugoso, paulo pubescente, lateribus valde rotundatis, elytris rugose punctatis, breviter pubescentibus, costis angustis, impressione ad medium foveisque posticis duabus vix distinctis, subtiliter serratis, apice singulatim rotundatis; subtus cupreo-ænea, punctata pubescens, prosterno fortiter punctato. Long. .31.

One female from California: Mr. Murray: Very distinct by the short sparse white pubescence of the upper surface, and the very finely serrate elytra. The ventral segments have the usual triangular smooth spaces, but their angles are not prominent; the last segment is rounded at the tip, and its lateral serration is very fine.

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Several species mentioned by the older authors, as coming from North America, are not noticed in the preceding pages, because they evidently do not belong to the fauna of the United States.

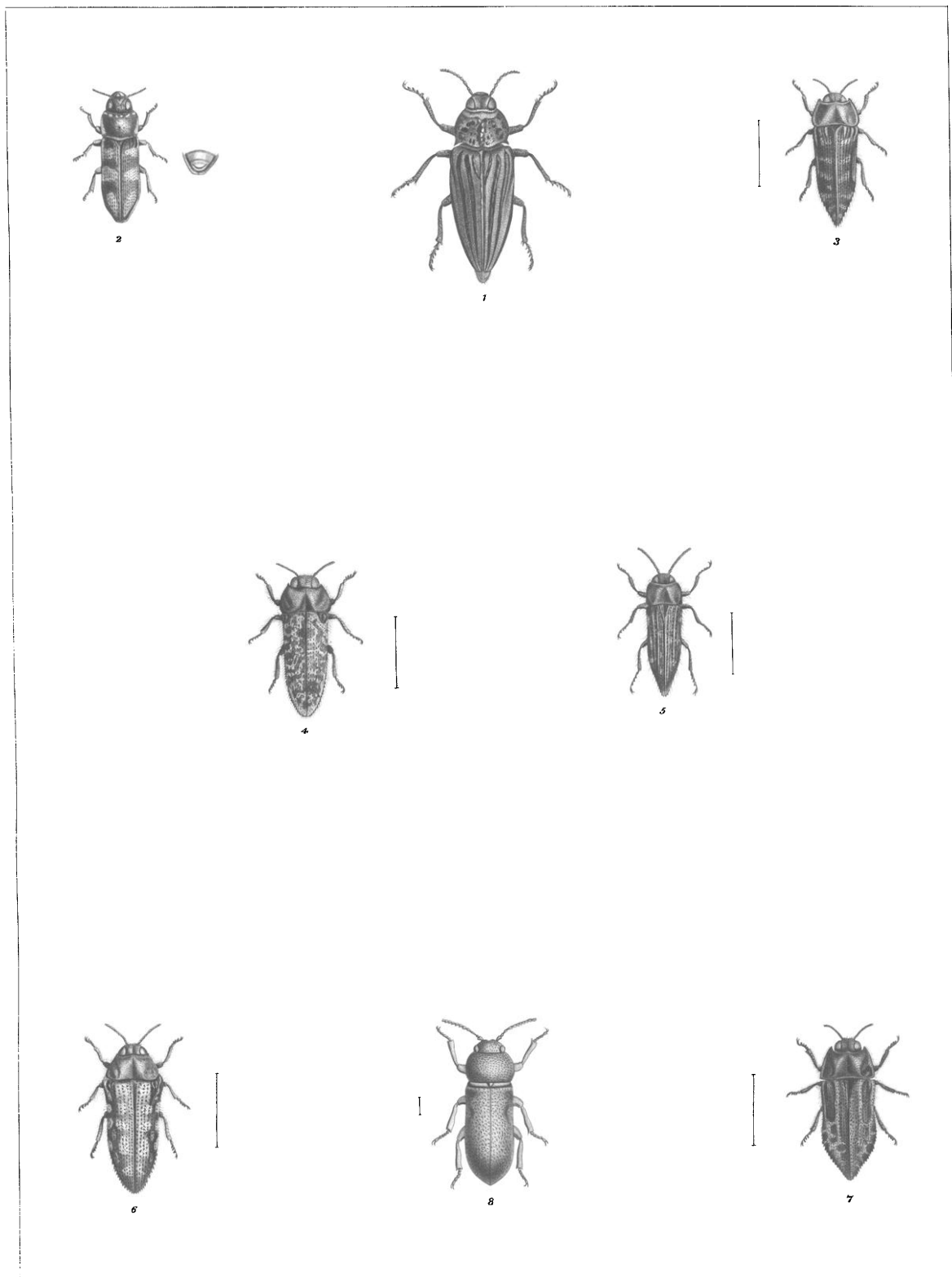
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*Edwin Sheppard, Del.*

*James Duthie Sc.*

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2. *Thrinopyge alacris* Lec.
3. *Acmaeodera opacula* Lec.

4. *Acmaeodera haemorrhoea* Lec.
5. .... *comata* Lec.

6. *Acmaeodera gibbula* Lec.
7. .... *semivittata* Lec.
8. *Haplostethus subcyaneus* Lec.